

'It's Important to Know In Time'

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The Newspaper of the Industry

Air Conditioning & REFRIGERATION

Reentered as second-class matter October 3, 1936 at the post office at Detroit, Michigan, under the Act of March 3, 1879. Trade Mark Registered U. S. Patent Office. Copyright, 1942, by Business News Publishing Co.



NEWS

'Written to be Read on Arrival'

Issued Every Wednesday at Detroit, Michigan

FEB. 11, 1942

Vol. 35, No. 6, Serial No. 673
Established 1926.

M-9-a Revision May 'Freeze' All Copper Products

Amendment Seems To Bar Sales Without An A-10 Priority

WASHINGTON, D. C.—An amendment to copper order M-9-a announced Saturday, Feb. 7, by the WPB apparently restricts the sale of copper and even finished copper products by mills, warehouses, or foundries except on preference ratings of A-10 or higher.

The amendment took the copper industry completely by surprise and no authoritative interpretations were obtainable late Monday, Feb. 9. Men in the industry generally agreed, however, that a literal interpretation of the amendment means a blanket "freezing" of all finished copper products on jobbers' or dealers' shelves, except where the purchaser can provide an A-10 or higher priority.

The amendment issued Feb. 7 declared:

"M-9-a paragraph D (deliveries by all others except refiners) now reads: 'Except as otherwise specifically authorized by the Director, orders for copper from dealers and orders for copper base alloy and copper products from any brass mill, wire mill, warehouse, or foundry must be accepted and filled by them in accordance with Priorities Regulation No. 1 as the same shall be amended from time to time except that no such order shall be accepted or filled by any such person which does not bear a preference rating of A-10 or higher.'"

(It was pointed out in the trade that the definition of "warehouse" in M-9-a includes any person who maintains a stock of brass mill products and sells them without a change in form. This would include copper tubing as sold by refrigeration supply jobbers.)

The NEWS expects to be able to present a full interpretation of this order as it affects the refrigeration industry, in its next issue.

L. F. Fedders, Head of Fedders Co. Dies

BUFFALO—Louis F. Fedders, president of the Fedders Mfg. Co., died Feb. 4 at his home here. He was 59 years old.

The firm which Mr. Fedders headed with his brothers was one of the major producers of extended surface heat transfer equipment in the country, making auto radiators and refrigeration and air conditioning coils and accessories. Lately, the firm has been a large producer of machine-gun links and bullet clips for the armament program.

Mr. Fedders leaves a widow, a son, two brothers, C. W. and Theodore C.

(Concluded on Page 16, Column 2)

Nash-Kelvinator Makes \$885,153 In Quarter

DETROIT—Nash-Kelvinator Corp. for the three months ended Dec. 31, 1941, the first quarter of its fiscal year, reports a profit of \$885,153 after provision for normal and excess profits taxes amounting to \$1,150,000. This compares with a profit of \$87,000 for the similar quarter of 1940.

This is an interim report and is subject to year end adjustments and to a more complete appraisal of the effect of the cessation of the manufacture of civilian automobiles, it was said.

Thor Washer Sales Halted; Priorities Violation Charged

WASHINGTON, D. C.—Hurley Machine division of Electric Household Utilities Corp., Chicago, manufacturer of "Thor" washers and ironers, has been ordered by the War Production Board to suspend all production and sales until next Aug. 1 as a penalty for violating priority orders.

The WPB said that "with full knowledge" of its production quota, which had been set at 44,376 washers and ironers during September, October, November, and December, 1941, the company had produced 76,770 units, in direct violation of the order.

The action, most drastic yet imposed by the government because of priorities violations, is effective immediately, and prohibits the company from processing, assembling, or producing washing machines or ironers until the suspension expires.

Price Ceiling Placed On Washers, Ironers

WASHINGTON, D. C.—Price schedules prohibiting manufacturers of domestic washing machines and ironers from charging prices higher than those in effect between Oct. 1 and Oct. 15, 1941, were put in effect last week by the Office of Price Administration.

The schedule, which applies on wholesale prices, becomes effective Feb. 9. An exception to the general order is granted Apex Electrical Mfg. Co., Cleveland, which is permitted to charge the prices now in effect.

Supplemental Lines For Appliance Dealers To Be Exhibited

PITTSBURGH—Related lines that refrigeration and appliance dealers may handle in their efforts to outmaneuver priority restrictions will constitute an important part of exhibits at the showing of the Wholesale Merchants' Division of the Chamber of Commerce, scheduled for Feb. 23-25 in the William Penn hotel. Between 40 and 45 firms will exhibit. Related lines will include wallpaper, floor coverings, and other materials, including furniture.

Times Appliance Co. Tests 5 New Products

NEW YORK CITY—Times Appliance Co., Westinghouse distributor in the New York metropolitan area, has added a number of new merchandise lines for 1942 to serve its dealer organizations. New lines include: Stevens Mfg. Co., mixers; Walters-Conley Co., "Phonola" phonographs; GM Laboratories, exposure meters; Bright Star Battery Co., flashlights and batteries; and Replogle Globes, Inc., "Lyric" phonograph record racks.

1941 Cleveland Sales Pass 50,000 Units

CLEVELAND—Sales of household electric refrigerators in the Cleveland territory during 1941 totaled 50,463 units, an increase of more than 35% over the 37,138 units sold in 1940, according to figures compiled by the Electrical League of Cleveland from

(Concluded on Page 16, Column 2)

What Has Been Done About REPAIR PARTS?

Managing Editor Relates the Story of Efforts by Industry Committees and the News to Secure High Priority Rating For Needed Replacements

Brunner Mfg. Co.
Utica, N. Y., U. S. A.

Phil B. Redeker, Managing Editor:

As the situation stands now, there is no relief for the butcher, the baker, the grocer, and similar users of refrigeration units which are used for food preservation purposes. If a condensing unit wears out or requires repairs, his only relief is to find someone who can furnish him repair parts out of inventory without priority or to apply for one with PD-1 or PD-1-a form.

The Automotive Industry, Petroleum Industry, Farm Equipment Industry, the Dairy Equipment Industry, and others have been provided with a means whereby the users of equipment can keep them in repair.

It would seem that there is no more an important thing in the domestic economy of America than food preservation and yet, so far as we can determine no provision has been made to enable users of refrigerating units to maintain their equipment to protect the public health.

You, as an editor of one of the important publications in this field whose subscribers look to you for help, should be vitally interested in this problem. We would like to know what you are doing about it.

The thought has occurred to us that if the users of equipment who require repair parts would deluge the OPM with a request for relief by filing an enormous number of PD-1's they might wake Washington up to the need of relief for this class of equipment users.

We will appreciate your comments. There may be a way that you know of whereby relief is provided but although I have made a very serious study of the matter I have not been able to figure any basis in anything that has been issued by OPM which permits relief for anyone except a producer and the butcher, the baker, and the grocer are not classified as producers.

O. R. McDONALD,
Priorities Division

Dear Mr. McDonald:

My first impulse was to answer you in the manner that an OPM official replied to a somewhat similar question put by an executive of one of the refrigeration manufacturing concerns during a conference not so long ago in Washington:

"Say, just what are these refrigeration repair and commercial orders," inquired the executive when the discussions plunged right into details of the proposals. "I don't know what this is all about—bring me up to date on it."

"If you had been reading AIR CONDITIONING & REFRIGERATION NEWS regularly you'd know what this is all about," replied the OPM official a little coldly.

But smart answers do not bring relief to the butcher, the baker, the restaurant owner, and others who must get repair parts to keep their food storage equipment in operation, nor do they give solace or aid to the distributor, dealer, and service man who is in crying need of priority aid on essential refrigeration equipment.

Just what is the situation now on priority relief for the refrigeration industry? It is as you have painted it—no help for any user of refrigeration lower than the classification of manufacturer for a repair parts priority (other than the involved filing of a PD-1-a) and no indication to manufacturers of commercial refrigeration as to what they will be permitted to manufacture.

BUT, kicking around somewhere on the desks of War Production Board officials are two excellent documents which would grant the refrigeration industry the right to go ahead and supply equipment for only the most essential of needs.

One of these is the proposed repair parts priority order, which had considerable merit. (A description of this order was published in the Dec. 31 issue of the NEWS.) From time to time since the first of the year the industry has been assured by everyone in the government agencies from Donald Nelson right on down that "the repair parts order will go into effect any day now." Latest rumor off the grapevine is that the order will become effective about the last of February—maybe.

The other is the limitation order for commercial refrigeration, an "input" order establishing the maximum amounts of essential refrigeration equipment that manufacturers might produce, and eliminating non-essential equipment, as defined.

Apparently receiving the approbation of those OPM officials who had been placed in charge of refrigeration industry affairs, the order is still in the "conference stage." An announcement was made that a "permanent" industry committee would be appointed and would meet

(Continued on Page 4, Column 1)

Borden Reports Parts Order Is Near Completion

Manufacture of Multiple V-Belts 'Assured' To Jobber President

CHICAGO—President C. E. Borden of the National Refrigeration Supply Jobbers Association, who has just returned from a visit to the Industry Operations and Civilian Supply divisions of the WPB in Washington, reports progress on the refrigeration repair parts order with some hopes "that it might be out in another two weeks," and got encouraging news concerning the continued manufacture of belts for driving refrigeration equipment.

According to Mr. Borden, there have been some revisions in the proposed draft of the "emergency service and repair" order. The provision pertaining to the licensing of service men is said to have been eliminated.

The maximum unit inventory of jobbers, as provided for in the proposed order, has been changed from as of Dec. 31, 1940 to any 1940 date—meaning the peak inventory of that year will be the maximum instead of the lowest inventory.

The order is at present being debated in the legal and allocations divisions of the WPB, says Mr. Borden, and it is possible that a questionnaire may be sent to the industry before all points are finally settled.

In discussions with the Rubber Products Branch in Washington, Mr. Borden expressed his alarm over Order M-15-b which apparently prohibited the manufacture of rubber V-belts, plus a letter of interpretation from one of the officials of the branch which declared that the refrigeration industry would have to depend on belts made from reclaimed rubber.

This latter would be a serious handicap on any multiple drive system, Mr. Borden pointed out, and dual belts are now common on 1/4-hp. units. The difficulty rests in the fact that reclaimed rubber is not uniform, so that two belts on a

(Concluded on Page 16, Column 1)

Carolina Power Co. Maps a 'Survival' Plan For Dealers

RALEIGH, N. C.—In an effort to help its cooperating dealers weather the effects of present shortages of both major and small appliances, Carolina Power & Light Co. has decided to abandon all major appliance selling during 1942, and to limit small appliance merchandising to "those items which are considered most necessary to the home."

The utility has had a cooperative program for dealers in operation since 1935 on major appliances, and its 1941 sales of this equipment were less than 5% of the dealer total. Under the new program, however, even this limited selling effort will be given up in the dealer's interest.

Under its 1942 program, the power company plans:

1. To turn all available new business over to associated electrical dealers. All major appliance sales will be discontinued by the company, so that more equipment may be made available to dealers.

2. To discontinue sale and stocking of seasonal appliances, such as fans, room heaters, and appliances of a

(Concluded on Page 16, Column 1)

When Ladies Meet

'Woman-to-Woman' Selling Accounts For 65% of Memphis Dealer's Volume

MEMPHIS, Tenn. — One time women trust their own sex is when they are purchasing appliances, sales figures in the appliance department of Goldsmith's department store here reveal. Of the more than 300 refrigerators sold last year, 65% is credited to the department's nine saleswomen. Only four men are employed.

"After surveying weak points in our sales structure, we found that in every case where a sale was lost the trouble could be located in the salesman's discussion of how to use the range for cooking. Women simply do not believe that a man can discuss intelligently how to prepare meats and vegetables. Thus a lot of his effort is wasted," explained Fred Bryant, manager of the department.

"On the other hand," he continued, "women know that our saleswomen are cooking every day on our ranges and using refrigerators and washing machines, so they pay a lot more attention to what the saleswoman has to say."

PROSPECTS BELIEVE THEM

After experimenting with an all-man crew and his present system, Mr. Bryant is sold on the advantages of women as appliance salespersons. Results have convinced him that women do the best job, simply be-

cause it is a fact that one woman would rather buy from another woman.

Only veteran saleswomen are allowed to tackle the appliance selling job, most of them having been with the store for 10 to 12 years. They receive training from appliance manufacturers' representatives or distributor salesmen who spend a few hours a week in instructing them how to show and sell the points of new models. After a few years of this sort of training, the saleswomen become competent authorities on appliances and are capable of discussing any of them intelligently and convincingly. Newer employees seldom sell appliances before they have been in the department two years.

HAVE REGULAR CUSTOMERS

Mr. Bryant pointed out that one reason the saleswomen can do the job more quickly and put over the same ideas as the men is the fact that each one of them has built up a large following from housewares customers in many years with the store.

"After a while," he stated, "women customers begin to ask for the same salesperson whenever coming to the store to buy can openers, glassware, kitchen gadgets, and eventually, larger-unit-price merchandise such

as kitchen furniture and appliances. When a customer has been satisfied in this way for many years, the chances are she will listen more sincerely to our suggestions and buy with a lot more confidence."

Only one of the men is an actual appliance specialist, otherwise 95% of the total volume is sold by the nine saleswomen. Each is paid the regular housewares commission of 6% on every appliance sale. The feminine personnel is set a specific quota each month and enjoys a bonus on all sales over that mark. The regular appliance men receive a straight commission which represents his total income.

Kindley Named Head Of Capitol League

WASHINGTON, D. C.—George F. Kindley, vice president of Edgar Morris Sales Co., Westinghouse distributor, was elected president of the Electric Institute of Washington for 1942 at the annual membership meeting of the organization Jan. 28.

Named vice president was Charles J. Allen, district manager of the Baltimore-Washington division of Frigidaire; F. C. Schneider of C. Schneider's Sons was named treasurer; and M. J. Dex of District Electric Co. was named secretary. The last two men are specialty appliance dealers.

Mr. Kindley, new president of the institute, has a background of distributor experience in developing a strong dealer organization, built in its early stages around the Westinghouse refrigerator and later branching out to other equipment.

Distributor-Dealer Doings

Salesmen's Union Asks 'Full Trade-In Values' No More Cut Prices

MILWAUKEE—Sales and Service Union, local No. 1343, a union which embraces salesmen of appliances in the Milwaukee area, has recognized the threat of a merchandise shortage to its members, and recently made a formal statement on the subject to the trade.

The statement, prepared by E. G. Weishan, secretary of the local, makes some suggestions for preparing for the condition:

"There can be no reason to doubt that the manufacture of electrical appliances, especially refrigerators, stoves, ranges, and washers will be seriously curtailed this year. Resulting shortage will bring with it various problems for you and for us."

"The Sales and Service Union, Local 1343, is anxious for the appliance dealers in the Milwaukee area, not only to remain in business but prosper. Naturally, we are anxious to keep our salesmen employed and we know that you will be reluctant to disband sales crews painstakingly assembled. It is with this thought in mind that we now venture a few suggestions."

"In the face of the above situation, price-cutting (to a lesser extent it is true) still continues. We believe that it is necessary for every appliance dealer to wring out every penny of profit possible on the merchandise he has in his store or is able to get."

"For this reason we suggest that there be no further cuts in price; that trade-in allowances be no greater than can be recovered from the resale of the trade-in; that, as an economy measure and because under the circumstances the extra night is no longer necessary, stores remain open for business on only three nights of each week instead of four as in the past."

"We believe that every possibility of other sources of revenue from the sale of merchandise not now handled should be explored. Recordings, on which there are no restrictions as to manufacture, offer one possibility; perhaps fluorescent lighting offers another, and expansion of the service end of the business certainly offers an opportunity for additional revenue."

Kearns Is Frigidaire Dealer In Asheboro

ASHEBORO, N. C.—Kearns Furniture Co., Inc. has been appointed a Frigidaire dealer here, succeeding Russell Parks, who has left the appliance selling field to enter defense work. E. M. Kearns is president of the new dealership.

Great Variety Shown In 'Supplementary' Lines

-- From Deepfreeze Units To 'Blackout' Compacts

BALTIMORE—Two Baltimore appliance distributors have taken on new products in order to supplement dwindling supplies of refrigerators, ranges, and other appliances.

The Chesapeake division of General Electric Supply Corp., covering Baltimore, Washington, D. C., and Wilmington, Del., areas, has added the Deepfreeze line of refrigerating units, and the Coleman oil heater line.

Simon Distributing Corp., Hotpoint products distributor, has added distribution of the Viton sunlamp line, and the Firefly line of blackout compacts.

Fans, Sinks, Cleaners Added By Williams

PITTSBURGH—J. A. Williams Co., appliance distributorship, recently held a three-day preview of 1942 products, at which five new lines of equipment recently taken under franchise were shown to dealers in this area. In addition to its original lines of chrome furniture and Zenith radios, the company displayed Stewart-Warner appliances, distributorship of which was recently transferred from Brown-Dorrance Electric Co., ABC-O-Matic and conventional washers, Universal cleaners, Youngstown sinks and cabinets, and Freshened Air fans. The three-day preview was in charge of W. C. McClelland, sales manager.

Blackwood's, Inc. of Raleigh Adds Stewart-Warner

RALEIGH, N. C.—Blackwood's, Inc., of Raleigh, automotive supply distributor with branch stores in Durham, Rocky Mount, Burlington, and Fayetteville, has been appointed Stewart-Warner appliances distributor for 28 counties in eastern North Carolina.

O. C. Blackwood is president and general manager of the company; William L. Flournoy is secretary, and E. D. Woolridge is manager of purchasing and sales.

Gilbert Tosch Takes Job With Ordnance Plant

DALLAS, Tex.—Gilbert Tosch, service engineer for Dallas Air Conditioning Co., Inc., holder of extensive government contracts, has been named superintendent of welding at the big U. S. ordnance plant building at Texarkana, Tex.

THERE IS NO
PRIORITY ON
IMAGINEERING

EVERY INDUSTRY, every responsible man in industry, has the present duty of answering two questions.

FIRST ONE IS: Are we, am I personally, doing everything within my power for the war? Our answer here at Alcoa is a plain, unqualified, yes.

NEXT QUESTION IS: What are we doing about the day when we will all need business, which is the polite way of saying, when millions of jobs will be needed for the boys who come back, and for the boys who stayed back to make the weapons.

IMAGINEERING, you know, is the word we have coined to define what we business people have all got to do about the future; about the products we are going to make and the services we are going to be able to offer when this war is over. Imagineering is imagination plus engineering.

HOW DO YOU DO IT? One way would be to figure out, now, how to take advantage of all the aluminum that is going to be available.

QUICKEST WAY TO GET AT IT is to take one of your products or a piece of equipment that "just couldn't" be made of aluminum, and ask yourself, Why not?

MEANING, OF COURSE, why not light; why not stronger for the same weight; why not resistant to corrosion, and so on, ad infinitum. The first man in any line of business who calls tradition a liar, and things-as-they-are a millstone, is the man who is going places; the man who is going to make peacetime pay rolls.

THAT'S IMAGINEERING AT WORK. We've got some ideas here at Alcoa. We're trying to pass them out. We are looking for men who have made themselves receptive by doing some solid Imagineering on their own hook, in their own fields.

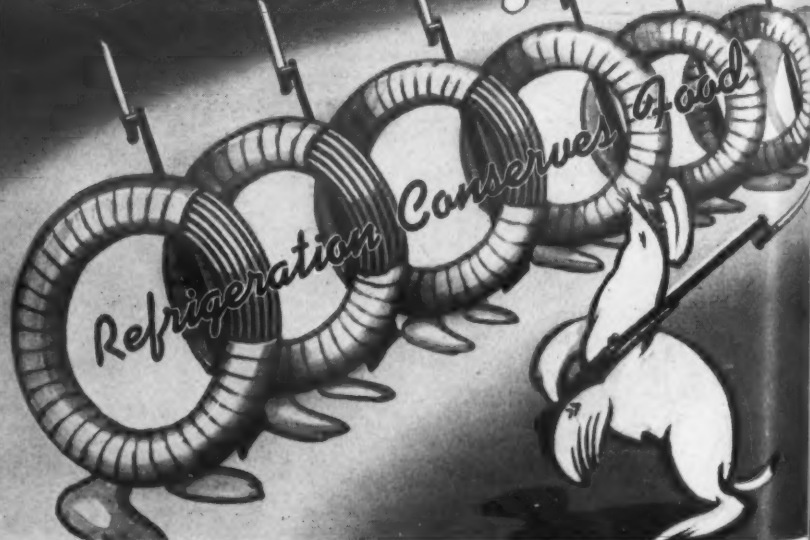
Aluminum Company of America, 1975 Gulf Building, Pittsburgh, Pennsylvania.

ALCOA ALUMINUM



THE JOB
IS
BEING
DONE

PENN TUBING...
for defense!



PENN BRASS & COPPER
COMPANY, INC.
POWELL AVE. * ERIE, PA.
Seamless Brass and Copper Tubing

Priorities Information

New PD-1A Simplifies Extension of Rating To Supplier Firms

WASHINGTON, D. C.—Beginning Feb. 2 applications for individual preference ratings may be filed on the new PD-1A application blanks in accordance with Priorities Regulation No. 3 which was issued on Jan. 12. Preference ratings assigned on Army and Navy contracts may now be issued on form PD-3A.

The most important feature of Priorities Regulation No. 3 is that ratings assigned on PD-1A and PD-3A forms may be extended to suppliers and sub-suppliers by a simple endorsement on purchase orders. Heretofore, ratings assigned in response to applications on the old PD-1 forms have not been extendable under any circumstances, and ratings assigned to Army and Navy orders on PD-3 forms could be extended only if the extension were countersigned by an authorized government officer when the amount involved was more than \$500.

Because of the tremendous printing job involved, PD-1A forms will not be available in quantity until about the middle of the month. However, the forms may be reproduced by anyone if the reproduction is exactly like the official form as it will be issued Feb. 2. Reproductions made from earlier versions of the form which were prepared by OPM will not be valid.

LIMITS ON EXTENSION

When PD-1A forms are not available, applications may still be filed on PD-1 forms until March 2. However, ratings which have been assigned or which are hereafter assigned on PD-1 forms cannot be extended.

When an individually rated order is served upon a supplier by the original applicant under the new procedure, the rating may be extended by the supplier, by his suppliers, and sub-suppliers to obtain any material which will be delivered to the original applicant in accordance with the rating, but neither the applicant, his suppliers, or sub-suppliers may use the rating to obtain machinery or capital equipment which they use in fabricating parts to fill the order.

If producers who have been assigned a rating on a PD-1A form need machinery or capital equipment for this purpose which they cannot obtain without priority assistance, they must apply for a separate preference rating on another PD-1A form. Prime contractors who need machinery or equipment to be used exclusively in filling Army or Navy orders may be given a rating for use in obtaining such machinery or equipment on PD-3A forms.

REPLACEMENTS COVERED

Another important change made by Priorities Regulation No. 3 allows the recipient of an individual rating, his suppliers, and sub-suppliers to employ the rating for replacement in inventory of materials used in filling the rated order, provided such

replacement does not increase inventories above a practicable working minimum.

If the materials to be replaced are in whole or in part manufactured, processed, assembled, or otherwise physically changed by the supplier, the rating must be extended while the materials are in process of fabrication. For materials which are not processed or otherwise changed by the supplier, extension of the rating may be deferred up to three months, until an order can be placed for the minimum quantity procurable on customary terms. This provision is primarily for the benefit of wholesalers and distributors, enabling them to group their own orders while making deliveries in small quantities.

The new regulation also allows a supplier or sub-supplier who has received two or more purchase orders bearing ratings of the same grade to include in a single purchase order or "basket," within the limitations which have been indicated above, any or all of the material which he requires to make deliveries in accordance with the rated purchase orders which have been served upon him. In such case, he must specify in the certification on his own purchase order all of the Preference Rating Certificate form numbers and serial numbers referring to the orders in connection with which he is extending the ratings.

All persons who receive or extend preference ratings assigned on PD-1A and PD-3A forms must keep records as prescribed by Priorities Regulation No. 1 and make such reports as may be required by the Director of Priorities. Use of PD-3A forms may also be subject to such further requirements as may be set forth by the Army and Navy Munitions Board with the concurrence of the Director of Priorities.

No Special Permit Needed To Extend AA Ratings

WASHINGTON, D. C.—Producers operating under the Production Requirements Plan are permitted to extend AA ratings without special permission from the Bureau of Priorities by an amendment to Preference Rating Order P-90.

Producers operating under the Production Requirements Plan have been forbidden to make use of any preference ratings except those assigned on PD-25A application forms. The amendment makes an exception to this rule in the case of AA ratings, to avoid delay in the handling of rush military contracts.

Duplicate Priorities Forms Available In Quantity

PITTSBURGH—Rieger's Duplicating & Mailing Service, Inc., 319 Third Ave., has announced that it is equipped to serve manufacturers and others with such priorities forms as they may require, in quantities of 100, 250, 500, and 1,000. A list of available forms, and quantity prices, may be obtained from the company.

Chromium Now Under Complete Allocation

WASHINGTON, D. C.—Chromium, already strictly controlled, last week was placed under a complete allocations system by the Director of Industry Operations by an amendment to Order M-18-a.

The amended order provides that no chromium may be melted except with specific authorization of the Director of Industry Operations. It is designed to prevent depletion of existing stocks, and to control further the flow of this important steel alloy.

Last week's order, together with Order M-21-a, which limits the uses of chrome steel, makes use of the metal completely subject to the Director of Industry Operations.

M-18-a, as amended, revokes Order M-18 and takes effect upon issuance. It expires on June 30, 1942.

N. Y. Warned of 'Critical' Shortage of Power

ALBANY, N. Y.—New York State is faced with a "critical" shortage of electric power for war production industries which threatens power rationing in up-state communities this year and in New York City in 1943, the State Power Authority said in its eleventh annual report recently submitted to Gov. Lehman and the legislature.

Power requirements increased 40% in the five years from 1935 to 1940, the report said, while generating

capacity increased less than 3%. It estimated that up-state New York would have a shortage of 506,600 kilowatts by December, and pictured an up-state power rationing system under which number and size of lights in private homes would be regulated, along with use of refrigerators, radios, and other appliances at certain hours, store and window lighting, farm power, etc.

New York City at present has a temporary surplus of at least 300,000 kilowatts, the report said, but transmission facilities are inadequate to make more than a small part of it available up-state. By 1943 or sooner, the report estimated, New York State as a whole will experience a power shortage, since the up-state deficiency will be at least 350,000 kilowatts greater than the New York City surplus. A blackout of the "Great White Way" and rationing for New York City consumers appears probable, the report said.

\$150,000 In Bonds Is Crosley Factory Goal

CINCINNATI — Each work-day morning, workers in the Crosley Corp. plant here start their labors to the strains of "Any Bonds Today?", carried to every part of the building by the plant-wide public-address system, as a reminder that a campaign is under way to sell \$150,000 worth of Defense Bonds to the 3,500 plant workers.

The campaign is sponsored jointly by the Crosley management and Crosley local 1061, International Brotherhood of Electrical Workers.

The campaign will continue until the \$150,000 goal is reached. R. C. Cosgrove, Crosley vice president and general manager, bought the first bond.

EARNINGS

Davison Chemical Corp.

BALTIMORE — Davison Chemical Corp. and subsidiaries for the six months to Dec. 31, 1941, report net profit of \$330,705, compared with \$57,575 net profit for the corresponding period of 1940.

Universal Cooler Corp.

MARION, Ohio—Universal Cooler Corp. for the December, 1941 quarter reports net income of \$3,844, equal to 4 cents each on 101,178 Class A shares, compared with a net loss of \$67,660 for the quarter ended Dec. 31, 1940.

Hussmann-Ligonier Co.

ST. LOUIS — Hussmann-Ligonier Co. and wholly owned subsidiaries for the year 1941 report net profit of \$344,800, equal after preferred dividends to \$1.84 each on 171,023 common shares, excluding 3,189 treasury shares and 1,313 shares held as an investment. Net profit in 1940 was \$302,808, or \$1.59 a common share.

There Is No Substitute For Experience

80° BELOW!

To meet the exacting needs of mechanized warfare, American industry is now "doing the impossible."

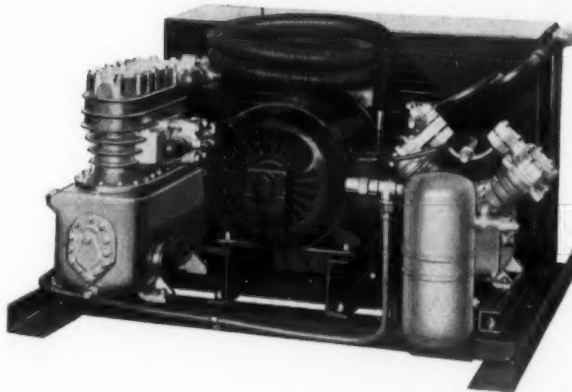
Under the tireless inspiration of the National Defense Program, results that were regarded as impossible last year have become standard practice today.

In the field of industrial refrigeration, for example, Servel is now building scores of specialized machine units that deliver extremely low temperatures. Not 5° or 10° above zero—but 60°, 70°, and even 80° below zero!

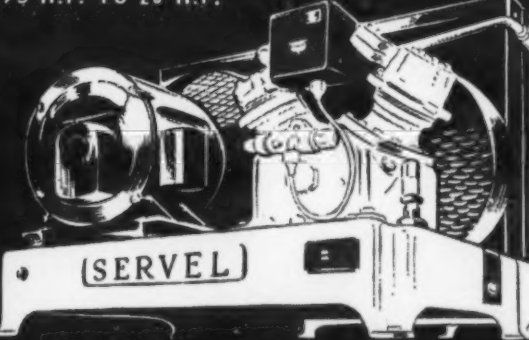
Typical of these new low-temperature units is Model SE-78, illustrated above. This is a two-stage unit, producing approximately 1/2 ton of refrigeration at 70° to 80° below zero.

Larger and smaller models are also available for heat treating, instrument testing, sublimation of blood plasma, and other defense applications demanding low temperatures.

For full details on these amazing new developments, write today to Servel, Inc., Electric Refrigeration and Air Conditioning Division, Evansville, Indiana.



OVER 80 STANDARD MODELS —
AIR-COOLED AND WATER-COOLED
1/2 H.P. TO 20 H.P.



SERVEL

COMMERCIAL REFRIGERATION
and
AIR CONDITIONING



REFRIGERATION CONTRACTORS...

WE BUILD
SPECIAL SIZE

COOLING ROOMS FOR YOU AND FOR YOU ONLY!!

Yes, that's Right—any length, any width, any height, and to any specifications! And, you don't have to pay a premium price, either. Try us next time you run onto a job where standard sizes are too large or too small for the available space. . . . Remember, too, this "specials" service enables you to earn a profit on the whole job—on the box as well as the machinery! Prompt shipments, not over two weeks. . . . Our quick-figuring price list enables you to estimate "on-the-spot" and you set your own profit. Write for it today.

LONG AND
NARROW

AROUND BEAMS
AND COLUMNS

IRREGULAR
SHAPES

SPECIAL
SIZES AND HEIGHTS

ALBERT H. BROMANN, JR.
820 NORTH CICERO AVENUE, CHICAGO, ILLINOIS

Air Conditioning & REFRIGERATION NEWS

August 30, 1941

Write Your Congressman: "Refrigeration Is Essential To America's Health"

Refrigeration Men Continue Campaign of Writing To Government

More Appointments To RECORD

Meeting Rallies Distributors, Dealers, and Servicemen To Fight Own Battle

The Trade Must Be Aroused! Keynote of Detroit Town Meeting

Air Conditioning & REFRIGERATION NEWS

August 30, 1941

How Commercial Refrigeration Protects the Health and Welfare of America—a Complete Survey of a Vital and Essential Industry

Why Commercial Refrigeration Should Receive Materials

Mechanical Cooling Protects All Our Major Foodstuffs

At Long Last! All-Industry Commercial Refrigeration Statistics! 1940 Commercial and Industrial Refrigeration Sales in United States And Estimated Amounts of the Materials Used in Their Production

COMMERCIAL REFRIGERATION UNITS	1939	1940	1941	1942
1. Less Than 1.5 HP	77,000	83,319	2	18
2. 1.5 HP	47,000	52,000	2	18
3. 2.0 HP	20,000	24,000	2	18
4. 2.5 HP	10,000	12,000	2	18
5. 3.0 HP	5,000	6,000	2	18
6. 3.5 HP	2,000	2,500	2	18
7. 4.0 HP	1,000	1,200	2	18
8. 4.5 HP	500	600	2	18
9. 5.0 HP	200	250	2	18
10. 5.5 HP	100	120	2	18
11. 6.0 HP	50	60	2	18
12. 6.5 HP	20	25	2	18
13. 7.0 HP	10	12	2	18
14. 7.5 HP	5	6	2	18
15. 8.0 HP	2	3	2	18
16. 8.5 HP	1	1	2	18
17. 9.0 HP	1	1	2	18
18. 9.5 HP	1	1	2	18
19. 10.0 HP	1	1	2	18
20. 10.5 HP	1	1	2	18
21. 11.0 HP	1	1	2	18
22. 11.5 HP	1	1	2	18
23. 12.0 HP	1	1	2	18
24. 12.5 HP	1	1	2	18
25. 13.0 HP	1	1	2	18
26. 13.5 HP	1	1	2	18
27. 14.0 HP	1	1	2	18
28. 14.5 HP	1	1	2	18
29. 15.0 HP	1	1	2	18
30. 15.5 HP	1	1	2	18
31. 16.0 HP	1	1	2	18
32. 16.5 HP	1	1	2	18
33. 17.0 HP	1	1	2	18
34. 17.5 HP	1	1	2	18
35. 18.0 HP	1	1	2	18
36. 18.5 HP	1	1	2	18
37. 19.0 HP	1	1	2	18
38. 19.5 HP	1	1	2	18
39. 20.0 HP	1	1	2	18
40. 20.5 HP	1	1	2	18
41. 21.0 HP	1	1	2	18
42. 21.5 HP	1	1	2	18
43. 22.0 HP	1	1	2	18
44. 22.5 HP	1	1	2	18
45. 23.0 HP	1	1	2	18
46. 23.5 HP	1	1	2	18
47. 24.0 HP	1	1	2	18
48. 24.5 HP	1	1	2	18
49. 25.0 HP	1	1	2	18
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51. 26.0 HP	1	1	2	18
52. 26.5 HP	1	1	2	18
53. 27.0 HP	1	1	2	18
54. 27.5 HP	1	1	2	18
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56. 28.5 HP	1	1	2	18
57. 29.0 HP	1	1	2	18
58. 29.5 HP	1	1	2	18
59. 30.0 HP	1	1	2	18
60. 30.5 HP	1	1	2	18
61. 31.0 HP	1	1	2	18
62. 31.5 HP	1	1	2	18
63. 32.0 HP	1	1	2	18
64. 32.5 HP	1	1	2	18
65. 33.0 HP	1	1	2	18
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79. 40.0 HP	1	1	2	18
80. 40.5 HP	1	1	2	18
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222. 111.5 HP	1	1	2	18
223. 112.0 HP	1	1	2	18
224. 112.5 HP	1	1	2	18
225. 113.0 HP	1	1	2	18
226. 113.5 HP	1	1	2	18
227. 114.0 HP	1	1	2	18
228. 114.5 HP	1	1	2	18
229. 115.0 HP	1	1	2	18

'Soda Fountain' Delivery Truck



Interior of the truck for delivery of packaged ice cream as developed on the West Coast. Individual flavors are more easily obtainable, refrigeration is conserved by the individual covers.

New Style Ice Cream Truck Fitted With Cabinets To Cut Loading & Delivery Time

Many Advantages Claimed For Refrigerated Truck

SAN FRANCISCO—Known as the "soda fountain" truck because it carries its cargo of ice cream in vertical cabinets with covers on the top, instead of in a box-type body with doors on the side, a new type of route truck built by Karl Koefoed Body Co., here for Golden State Ice Cream Co., of Sacramento, is designed to reduce both delivery time and cost of refrigeration.

Employing a new principle, the truck body, instead of carrying ice cream in a conventional box-type body insulated on all sides and with a door on the right side for loading and unloading, is made up of a regularly insulated panel body in which are built-in vertical ice cream cabinets, much the same as those used in the typical soda fountain.

11 CABINETS USED

Eleven of these cabinets are installed in the body. Six are arranged in a line on the left-hand side, two more at the front, and three on the right-hand side to the rear of the sliding door on the curb side of the body. A central passageway 17 inches wide is provided between the two rows of side cabinets to make each individual cabinet equally accessible to the driver.

Regulation glass windows, 30 by 20 inches, are provided in the body's sides and ends. In addition, dome lights operated from the truck's storage battery provide illumination on dark days and at night.

CUTS DELIVERY TIME

How this arrangement of cabinets reduces the time of delivery may be understood from a brief comparison of the methods of operation of the new type of body and that of the conventional two or three-hole refrigerated body. Interior of the conventional type of body, whether made up of one large compartment or divided into three compartments by transverse partitions, is reached through two or three doors on the right side of the body.

These doors are made as small as possible to keep the cold air from escaping each time one of the doors is opened by the driver. Usually they are about 2 ft. square. But the smaller they are made, the more time it takes to load the ice cream at the plant and then unload it again at delivery stops.

Liquid Carbonic Files For New Issue of Preferred Stock

CHICAGO—The Liquid Carbonic Co. has filed a registration statement covering 30,000 shares of \$100 par value preferred stock with the Securities & Exchange Commission. Details of the dividend rate, price, and underwriting group will be announced later, the company stated.

A special meeting of stockholders has been called for Feb. 13, to

authorize an issue of 50,000 shares of preferred stock, of which the proposed offering of 30,000 shares will be a part.

W. K. McIntosh, chairman of the company, said in the notice sent to stockholders that such an issue could be sold with a dividend rate between 4 and 5%, and that the proceeds would be about \$3,000,000.

The purpose was to strengthen the company against any difficulties which might confront business by reason of the war, and also to enable it to take advantage of any favorable opportunities to acquire additional properties, Mr. McIntosh stated.

Army Reports Fast Growth In Use of Frozen Foods

CHICAGO—Use of quick-frozen foods is rapidly gaining favor in the Army, Lieut. James M. Gwin, Quartermaster Corps officer in charge of dairy and poultry products procurement, declared in an address at the Frozen Food Forum luncheon during the recent Quick Frozen Foods Exposition here.

Greatest Army use of frozen foods so far, Lieut. Gwin said, has been in camps, mostly at air fields where large numbers of men are fed at one mess. Frosted foods are most popular in permanent camps, he pointed out, rather than during maneuvers. Such out-of-season foods as strawberries, peaches, berries, and asparagus have seen the widest use.

"Eviscerated poultry," Lieut. Gwin said, "is now an accepted food item in the Army. While the cost of it is greater per pound than the undrawn poultry, the saving in man-hours, freight, and the greater sanitation of kitchens more than compensates for the extra cost. Undrawn poultry, while meeting Army specifications, does not compare in taste to that drawn at the time of killing."

Quick-frozen foods have huge possibilities for Army use, Lieut. Gwin asserted. Boneless beef and fillets of fish are the two items most commonly used at present.

Rulings Relieve Tax Liability on Sales Of Parts For Assembly Into Units

LOS ANGELES—Two rulings on excise tax applications of particular importance to distributors of commercial equipment and refrigeration service men have been made by D. S. Bliss, deputy commissioner of internal revenue, Washington, D. C., in response to W. W. Allison, director of Refrigeration Service Engineers Society's local chapter.

The first ruling indicates that the excise tax is applicable on the wholesale price; the second, denying tax liability, reverses old rulings.

First question concerned the tax liability of a company purchasing a large reach-in box, a coil, and condensing unit, and installing them in a customer's place of business, and asked if the total sales price is subject to tax, including installation labor and material.

The answer follows: Since the term "manufacturer" includes any person who produces a taxable article by combining two or more articles, it is evident that the company, in the example cited, is a manufacturer of a taxable refrigerator, and accordingly should compute tax on the price at which similar refrigerators are sold at wholesale to dealers in the ordinary course of trade. Credit may be taken against the tax due on this transaction, for the tax paid by the manufacturers of the taxable components used in this assembly, such as cabinet, compressor, etc.

The second question was: Bill

Jones operates a refrigeration service and maintenance business, and in the course of his business sells two or more component parts on an old multiple system (apartment house, commercial, or a household refrigerator). Are these component parts taxable, and is the excise tax based on the total cost to the consumer, which includes installation labor?

Answer: It is assumed that Mr. Jones is not a manufacturer of the articles in question, but merely furnishes components purchased tax-paid from manufacturers; distributors, or dealers. His action in installing these components as replacements in existing refrigerators does not incur any tax.

Mueller Brass To Get Navy 'E' Pennant

PORT HURON, Mich.—The Navy "E" pennant, awarded for outstanding production of naval ordnance materials, will be awarded to Mueller Brass Co. here on Feb. 12 by Capt. E. A. Loffquist, chief of staff of the Ninth Naval District.

Fred L. Riggan, president of the company, will accept the pennant, and Edward H. Krenke, dean of Mueller employes with 27 years of service, will receive Navy "E" buttons for plant employes.

FOR DEPENDABLE, EFFICIENT, LOW COST REFRIGERATION

Essential to Our WARTIME NEEDS

SPECIFY

CURTIS CONDENSING UNITS

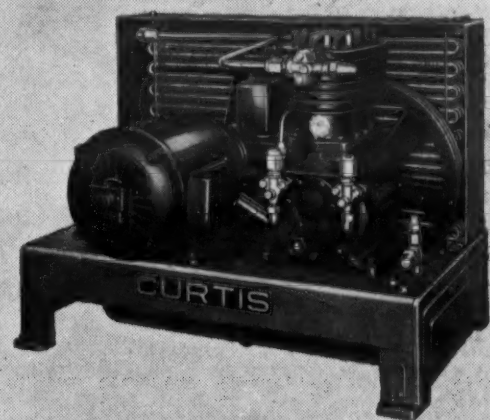
Economical processing, storage, and preservation of foodstuffs is of prime importance to our War effort. Efficient, dependable Curtis refrigeration avoids waste, cuts freezing and cooling costs, assures the maintenance of proper temperatures at all times.

The long life and trouble-free performance of every Curtis Condensing Unit, from fractional up to 30 tons capacity, assures better refrigeration at a lower cost for maintenance and operation.

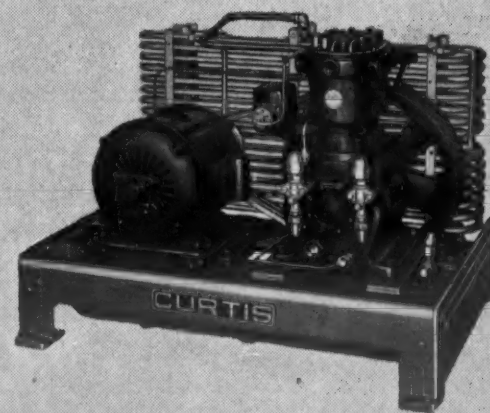
Mandatory priority restrictions have, of course, limited our ability to fully serve ordinary and civilian needs. But to the fullest possible extent, your orders for condensing units carrying priority ratings are handled on a corresponding preference basis by Curtis.

Throughout the industry, in many thousands of installations, Curtis Condensing Units have a remarkable record for outstanding performance—the result of long experience, precision manufacturing methods, and advanced features of engineering and design. And conservation for wartime needs demands efficiency and dependability above all.

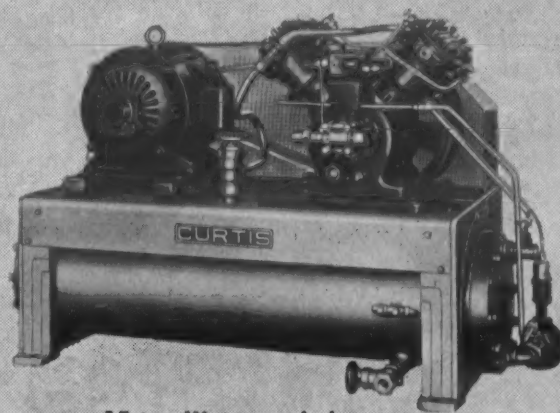
Particularly in these times, it will pay you to write for full information on the complete Curtis line—whether you sell, buy, or specify commercial refrigeration equipment today.



1 1/2 hp. Air-cooled Condensing Unit



5 hp. Water-cooled Condensing Unit (Counter-flow Type)



15-ton Water-cooled (Shell and Tube Type) Condensing Unit

CURTIS REFRIGERATING MACHINE DIVISION

of Curtis Manufacturing Company

1912 Kienlen Avenue St. Louis, Missouri

Established 1854

Air Conditioning & REFRIGERATION NEWS

Trade Mark registered U. S. Patent Office;
Established 1926 and registered as
Electric Refrigeration News

F. M. COCKRELL, Founder

Published Every Wednesday by
BUSINESS NEWS PUBLISHING CO.
5229 Cass Ave., Detroit, Mich.
Telephone Columbia 4242

Subscription Rates
U. S. and Possessions, Canada, and all countries
in the Pan-American Postal Union: \$4.00 per year;
2 years for \$7.00. All other foreign countries: \$6.00
per year. Single copy price, 20 cents. Ten or
more copies, 15 cents each; 50 or more copies,
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VOLUME 35, No. 6, SERIAL No. 673
FEBRUARY 11, 1942
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Refrigeration Will Help Win the War

Genesis of the 'Victory' Refrigerator

JANUARY 7 on this page of AIR CONDITIONING & REFRIGERATION NEWS appeared the first public suggestion of a "Victory" refrigerator, to be produced by one or two manufacturers, with all other household refrigerator manufacturers converting entirely to war production.

In the Jan. 13 "New York Times" appeared a news story predicting the same fate for the household refrigerator industry. While not named, sources for this news story were said to be "industry executives."

Last week AIR CONDITIONING & REFRIGERATION NEWS reported the meeting of a group of labor union officials with WPB officials to discuss the same proposition. More recently, Washington Columnist Raymond Clapper writes about the "Victory" refrigerator plan, credits it to labor union officials, and wonders caustically why neither the WPB (or its predecessor, the OPM) nor the refrigerator manufacturers had thought of this idea first.

IDEA CAME FROM THE 'HEAD MAN' HIMSELF

Perhaps it's time to reveal the source of information for our Jan. 7 editorial, where the idea was first broached. This source was none other than Donald Nelson himself.

The writer is a member of Donald Nelson's Advisory Committee of Business Paper Editors. At the first meeting of this committee, in Mr. Nelson's office Dec. 19, Mr. Nelson presented this idea—the voluntary abandonment of household refrigerator manufacturing by all but one or two producers, they to turn out a comparatively small number of units under

some such noncompetitive trademark as "Victory."

We discussed the repercussions of such a move—particularly its effect on the nation's independent appliance distributors and retailers. We also discussed our difficulties in convincing a portion of the industry—something we have been trying to do for almost a year—that it had better prepare for the most drastic curtailment. Aided and abetted by the roseate school of "it can't happen here" editorial writers in contemporary publications, a considerable portion of this industry has continued to laugh at us for seeing ghosts, and being afraid of the dark.

PROF. JOHN MAYNARD KEYNES FATHERED THE IDEA

After checking with Mr. Nelson and his public relations man, we published the "Victory" refrigerator idea in the first issue of the year. This should settle once and for all such remarks as Mr. Clapper's that it was too bad the nation had to wait for labor to think up such an idea.

This "consolidation of industry" idea has its roots much further back, in practice instituted in Great Britain about a year ago. John Maynard Keynes, now economic adviser to the British Embassy in Washington, is credited with fathering the idea. It has been applied to several industries over there.

We heard him expound it last June at a tea given by Lord Halifax at the British Embassy. Prof. Keynes suggested then that America might come to some such idea eventually.

QUOTAS LIKELY TO BE TOO SMALL FOR PROFITS

And here it comes.

Probable method of instituting this idea, as we get it, will be to establish total quotas for the industry so low as to make it unprofitable for the larger manufacturers to continue in business. After they voluntarily abandon the making of refrigerators, one or two smaller manufacturers can then pick up the fraction of the quota abandoned by the larger makers.

As to which distributors and dealers will get to sell the "Victory" refrigerators—there is a problem for which no one has found a solution. It promises to be a major headache.

Paying the Penalty For Progress

PHIL B. REDEKER, managing editor of the News, puts forth in his letter to a subscriber published on page 1 of this issue an interesting reason why it has been so difficult to impress upon Washington officialdom the honest and (to us) obvious essentiality of refrigeration.

It is that refrigeration is automatic. The average man has to start his car, turn on the electric light switch, flush the toilet. When anything goes wrong with the automobile, the electricity, or the plumbing, he is immediately and painfully aware of it.

REFRIGERATION IS TAKEN FOR GRANTED

Automatic refrigeration, however, performs its highly useful functions quietly, behind the scenes, seldom if ever needing John Doe's attention. Like the good wife, it is all too often taken for granted.

They'll Do It Every Time . . . By Jimmy Hatlo



Thus, in the present situation, the industry is actually penalized for its progress and mechanical excellence. A fine state of affairs!

In that connection, a number of items have recently passed by our glazed eyes as we read through the explosive columns of the daily newspapers. These items have commented matter-of-factly on the profound utility of refrigeration.

One of them, we recall, gave refrigeration equal credit with scientific farming for obsoleting the Malthusian Law (i.e., that population increase tends to outstrip the food supply, and that the population must be decimated periodically by war in order to prevent worldwide starvation).

Another one appeared in the Feb. 9 "Detroit News," in an article on life in Malaya by Dorothy C. Johnson. Said she:

"Once a week a cold storage van came from Penang with meats, choice fruits, and groceries. Oil-burning refrigerators from America made the problem of keeping things fresh an easy one, compared to the times of the old ice box in which nothing was safe and food turned bad while you looked at it."

From now on we're going to start saving such items, and hope readers will do likewise—and send such to us.

REFRIGERATION MUST BE SOLD AS A SERVICE

Perhaps we in the industry, too, have been at fault in taking matters for granted. We have gone along all the time thinking that everybody knew all about us and appreciated us. We have discovered, painfully, that they don't.

For too many wholesalers and retailers in the trade refrigeration has merely been an item of saleable merchandise. They have simply jumped on the bandwagon to sell something that was moving well. They have not learned to appreciate refrigeration as a service.

It's time for us to correct all that now. In its present straightened circumstances, this industry has room only for those who are aflame with the gospel of refrigeration. You must know what refrigeration does for humanity, not just how to chisel a competitor out of a deal.

The industry's first line of defense should be its distributing forces. And these forces must now become evangelists for the cause.

LETTERS

PLASTIC ICE TRAYS

D. C. Lingo Co.
213 LaBranch St.
Houston, Texas

Editor:

In one of your recent issues I read that Modern Products & Materials Co. were placing a plastic ice tray on the market.

I wrote this concern, but having no street address the letter was returned as undelivered.

Could you give me the name of this company and its address or the address of any other concern to whom we could write for information and prices on plastic trays?

D. C. LINGO

Answer: The address of Modern Products & Materials Co. is North Chicago, Illinois. No street address is necessary. We do not know whether they have yet gone into production with this tray.

Another type of plastic ice cube tray is being manufactured by the Swift Mfg. Co., 247 McDougall Ave., Detroit, Mich. This tray was described in a story on page 1 of the Jan. 28 issue of AIR CONDITIONING & REFRIGERATION NEWS.

SOURCE FOR PLASTIC TUBING

Refrigeration Supplies Co., Ltd.
1127-31 Dundas St.
London, Ont., Can.

Editor:

We have been trying to locate the manufacturer of plastic tubing or if not plastic, some synthetic material which is used as a replacement of copper tubing.

I wonder if you can assist us in any way in getting this information for us?

F. A. M. DAWSON,
General Manager

Answer: Plastic tubing is manufactured by the Acadia Synthetic Products Div. of Western Felt Works, 4115 Ogden Ave., Chicago, Ill. Description of this product appeared in the Jan. 14 issue of AIR CONDITIONING & REFRIGERATION NEWS.

BOOK ON WELDING

Muncie Refrigeration Co.
1400 S. Walnut St.
Muncie, Ind.

Editor:

Please tell me whom to write to or how I can obtain a copy of the book on welding as described on page 25 of the Jan. 14 NEWS.

C. B. CURRY

Answer: The booklet, "Welding Procedures," can be obtained by writing to Air Reduction Sales Co., 60 E. 42nd St., New York City. We understand that the price of this booklet is 60 cents.

THE STORY OF JEAN DU VAC

Motor Service
549 W. Washington Blvd.
Chicago, Ill.

Editor:

May we have your permission to reprint an article entitled "The Story of Jean du Vac, the Trader" which was released by your publication, providing we give your company a courtesy line on this reprint. We would like to reproduce this for sales promotion purposes and will very much appreciate this favor.

WAYNE ROGERS,
Advertising Manager

Government Men Now Working To Draft Revisions of Proposed Orders For Industry

(Concluded from Page 4, Column 5)

industry so essential as refrigeration (never believing that seven months later not even the repair parts priorities would have been granted).

Feeling that the industry was not being given the attention it deserved, the NEWS published another front page editorial in the next (Aug. 20) issue urging distributors and dealers to "Write Your Congressman: 'Refrigeration Is Essential To America's Health.'"

The Sept. 3 issue of the NEWS reported two significant events in refrigeration's progress towards a fair priorities treatment. One was the appointment of a 64-member Industrial Advisory Committee to the Air Conditioning & Refrigeration Section of the OPM, and the setting of Sept. 4 as the date for the initial meeting of this group.

The other event was the call sounded by the NEWS for a "Refrigeration Town Meeting" to be held Sept. 10 at the offices of the NEWS, and to which anyone in any part of the industry was invited to discuss ways and means of influencing Congress, OPM, OPACS, and others to grant needed priorities to the essential refrigeration industry.

The 64-man committee met in Washington, named sub-committees, and set about to tackle the problem of gearing the industry's manufacturing facilities to the armament program, and to prepare data on the subject of just what refrigeration products were "essential." But problems of the dealer, distributor, and the service man were "outside the area" of this committee, it was made clear.

At the "Refrigeration Town Meeting" the entire industry was represented, from topflight executives of manufacturing firms, to the hard-hit independent distributor, to the hard-knuckled independent service man. The sentiment was nearly unanimous that some voice was needed to give Washington the story of refrigeration in a forceful manner, and the meeting voted authority to name a committee to work out a program. Several suggestions as to how the campaign might be carried out were advanced at the meeting.

During the same week the OPM issued Preference Rating Order P-22, giving an A-10 priority to repair parts used on installations on the premises of manufacturers or wholesalers who use refrigeration. Since such users constitute at the very most 5% of the total use in volume (and much less from the standpoint of the number of users of refrigeration equipment) the order was only slightly less than worthless to the industry, and to those users of essential refrigeration equipment.

The committee that was named following the "Refrigeration Town Meeting" was called the "Temporary Educational Committee of Refrigeration Distributors" (TECORD) and set out to recruit more members to join in a major cooperative effort to "sell" the industry's importance. TECORD later became limited to suppliers, jobbers, service men, and commercial refrigeration contractors, while a new committee under the name "Electrical Appliance Retailers and Distributors Forum" (EARDF), was appointed to work separately for those interests that it represented.

TECORD launched a drive for nationwide circulation of a petition to OPM asking that the "refrigeration industry be classified as vital to the defense of our country and be given an A-3 rating so that this equipment may be maintained and so that adequate stocks of parts may be secured for repair." The National Refrigeration Supply Jobbers Association, which had been very active in Washington seeking an equitable program for the refrigeration industry, took over the active direction of this campaign.

EARDF inaugurated a letter writing campaign to Congress and Washington officials, stressing the plight of the independent distributor and dealer, and hammering home the essentiality of refrigeration. Mass meetings of dealers and salesmen were held in cities all over the land, from which delegations were sent to make personal calls on Congressmen.

TECORD sent petitions bearing an estimated 100,000 names to the Washington bureaus. So heavy was the barrage of letters from Congressmen asking "what about these letters from my constituents on the refrigeration matter" that OPM was forced to hire extra help to answer them.

To provide ammunition for the campaigns of the distributor, dealer, and service men groups formulated at the "Town Hall" meeting the NEWS made its Sept. 17 a special "Back to Fundamentals" issue. A section was devoted to the publication of reasons, taken for the most part from the official bulletins of the Federal Government, as to why mechanical refrigeration is vitally necessary in the home, on the farm, and in the commercial preservation of foodstuffs.

While publicly the OPM men appeared to be annoyed with this barrage of mail and petitions, privately they admitted that such efforts were centering attention on the industry and forcing earlier consideration of the industry's needs than would otherwise have been the case.

Late in October Sub-Committee No. 4 of the 64-man industry committee submitted a program calling for curtailments of from 35 to 50% in production of commercial refrigeration equipment, and qualifying the whole range of applications in the commercial refrigeration field from the standpoint of their essentiality. This was an excellently prepared and more-than-fair program.

Then on Dec. 7 came the Jap attack on Pearl Harbor. In recognition of the fact that all effort must be concentrated towards winning the war, the NEWS in a front-page editorial in the Dec. 17 issue announced the abandonment of TECORD and EARDF.

That the efforts of these committees had not been in vain was evidenced at a meeting Dec. 21 at which the OPM discussed with industry representatives a proposed Limitation Order for Commercial Refrigerating and Air Conditioning Equipment, based on the program submitted by Sub-Committee No. 4. In this order commercial refrigeration and air conditioning products would be divided into three classes of essentiality according to use. These classes are given cuts of 25%, 40%, and 50%, respectively, in the use of critical materials as compared with a base period of the 12 months ending June 30, 1941.

Also at this meeting it was disclosed that an "emergency service order" for the refrigerating machinery and equipment industry had been drafted which would give a priority rating to "emergency service" on all types of refrigeration installations—the thing that the industry had long been looking for.

It was at this meeting that an OPM official pointedly stated that "without the impetus given by the activities promoted by AIR CONDITIONING & REFRIGERATION NEWS it is possible that these orders might not have been drawn up by this time."

Yes, the orders were drawn—and they were all that the industry might ask for. But the early delays had been costly, for the dairy industry, the farm equipment field, the automotive parts and supply field, and the electrical and plumbing fields had gotten in their licks early—with their united industry fronts.

Since that Dec. 21 meeting no action has been forthcoming on plans for the refrigeration industry. A meeting of manufacturers of household refrigerators ended with the manufacturers receiving virtually no satisfaction as to what they might expect—other than further curtailment. The commercial refrigeration group was told to come to a meeting—it was hurriedly postponed. Later, word came that it had been postponed indefinitely.

Perhaps a clue to the "right thing" to do in this situation might be taken from our ally, Great Britain. The following excerpt from the October, 1941 issue of "Modern Refrigeration," a leading English trade publication, pulls no punches in its criticism of government favor of one industry over another—even to the point of calling certain officials "blockheads" for their acts. The excerpt follows:

"It is almost vain repetition to recall the high military testimony that 'Refrigeration Saved South Africa,' or that a decade and a half later it vitally sustained the Allies. Doubtless, similar or even louder appraisal of its merits will later crown refrigeration's services in the present giant struggle. Meanwhile the members of this industry struggle against great odds in feverish efforts to perform their daily task, finding the problem of supply of both men and materials frequently a baffling one.

"In a glance round at other industries, one will not fail to find interests of decidedly less importance than refrigeration which do not labour under such difficulties, but, on the other hand, enjoy a far greater degree of recognition from the powers that be. 'Kissing goes by favour,' is an old saying, but it is unthinkable that one industry should have a pull over another or that an industry vital to the nation should be allowed to languish or go short of its proper recognition because it lacks champions in the seats of the mighty.

"Such is the vital nature of the public store, which itself is only one of the many applications of mechanical refrigeration. The amount of consideration which the Government gives to cold store owners may be judged from the fact that it has never shown the least inclination to rectify the mistake made by the blockhead who bracketed the expensively equipped cold stores with wooden sheds in the list of establishments which were excluded from the benefits of the Derating Act. The best excuse which the Chancellor of the Exchequer is reported to have made for not repairing this injustice was that if he granted this application he would have to recognize many others. And so cold stores have dragged on their existence with this added handicap.

"So much for the large cold stores. They have behind them as a second rampart of food defence in wartime the tens of thousands of small commercial-sized refrigerating plants in food shops, wholesale and retail, which aggregate several million cubic feet of food-saving space. On another page of this issue, readers will see how the government is actually taking into military service the skilled specialist service engineers on whom the maintenance of these small commercial plants depends. That at least does not signify any special consideration by the Government for a front-rank section of food defence."—"Modern Refrigeration," October, 1941.

Where do we go from here? That's obviously up to Washington. Members of the industry have been breaking their backs during the last several months to drive home the fact that Refrigeration Is Essential. If what they tell us is true, this back-breaking has had results—results which will show up in a repair parts order very soon. We all await the issuance of that order with ill-restrained impatience.

PHIL B. REDEKER,
Managing Editor

Standard Cabinets Prove Adaptability As 'Blood Banks'

MARSHALL, Mich.—Regular commercial refrigerators supplied by Sherer-Gillett Co. here are being used as "blood banks" in hospitals operated by the Sisters of St. Joseph in Flint and Kalamazoo, Mich. Installation in St. Joseph's Hospital, Flint, which also will serve Women's Hospital in the same city, was made by Consumers Power Co.

Controls are a standard thermostat expansion valve, pressure control, and thermostat switch used in normal commercial applications. The refrigerators are equipped with master-keyed padlocks, so that access to the "bank" is under strict control. Temperature is held between 2° and 4° C. (35.6° to 39.2° F.).

The "bank" is just what its name implies, in that blood is donated by volunteers and given free to patients needing it. After recovery, the patient or one of his relatives donates sufficient blood to make up the deficit. Thirteen blood donors for the initial "bank" were accepted and typed the first day of operation.

If the actual blood is not used within the first several days, it is broken down, the plasma removed, and returned to the refrigerator for storage. Plasma must be removed before coagulation occurs, or it cannot be used. Having blood of all types ready for immediate use prevents many of the fatalities formerly resulting from delays in locating donors and making transfusions.

The fact that a standard commercial refrigerator, without special controls, can be adapted for this life-saving purpose is pointed to by Sherer-Gillett officials as emphasizing the importance of modern refrigeration in the event of local emergencies, which may result from sabotage, bombings, industrial speed-ups, blackouts, etc.

Wider Use of Frozen Foods Predicted Due To Shortage of Cans

NEW YORK CITY—A trend toward concentrated foods and greatly increased use of quick-freezing facilities to meet problems arising from the shortage of tin, as well as to conserve transportation, handling, and distribution costs is predicted by leading food manufacturers in replies to a survey by Research Market Corp. of America.

A shortage of domestic help, causing many more housewives to do their own cooking, will result in an increased demand for prepared foods that can be served with a minimum amount of preparation, the survey reported.

It was pointed out that "one car of frozen peas or spinach will equal eight to 10 cars of fresh packed in hampers or crates. One car of frozen orange juice can replace six cars of oranges."

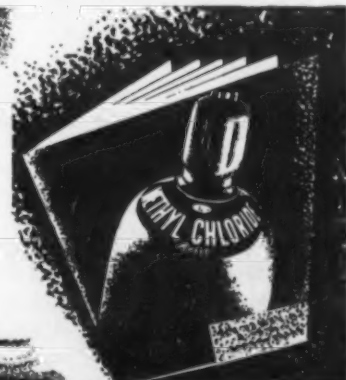
Dealer's Staff Signs Up For Bond-Buying Plan

JERSEY CITY, N. J.—Employees of Electric Products, Inc., distributor of commercial refrigeration and air conditioning throughout northern New Jersey, are making each payday a Bond-buying day by wholeheartedly endorsing the Voluntary Payroll Allotment plan for the purchase of U. S. Defense Stamps and Bonds.

Each payday every employee contributes at least 5% of his wages and commissions toward the purchase of Defense Stamps and Bonds.

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Digest of Laws relating to filing and recording of

States	Instrument recommended for use	File or record copy or original	Time limit within which to file or record	Necessary signatures	Acknowledgement or affidavit of whom required	*Fixtures Common Law (C. L.) or Statute	With whom is contract filed or recorded?	Place where contract is filed or recorded?
Alabama	Cond. Sales Contract	Record original except where amount involved is less than \$200, contract runs for 2 yrs. or less, and relates to household furniture or kitchen equipment, so long as property remains in county of Buyer's residence	Immediately	Buyer	None	C. L.	Probate Judge	County where the buyer resides and where goods are delivered and remain
Arizona	Cond. Sales Contract	Original or copy, except motor vehicles: copy, accompanied by certificate of title last issued if registered or owner's application for registration	Within 10 days from making of contract	Buyer	None, but fixture statement signed by Seller necessary	Statute	County Recorder, except in case of motor vehicles: Division of Motor Vehicles of State Highway Dept.	County where goods are first kept for use by buyer
Arkansas	Cond. Sales Contract	None Required	Unnecessary	Buyer	None	C. L.	None Required	None Required
California	Cond. Sales Contract	None Required (except for live stock and mining machinery)	Unnecessary	Buyer	None (except for live stock and mining machinery)	C. L.	None Required	None Required
Colorado	Chattel Mortgage	File Original	Immediately	Buyer (mortgagor)	Acknowledgement by Buyer	C. L.	Office of the County Clerk and Recorder	In the county where the goods are situated
Connecticut	Cond. Sales Contract	File Original—certain property excepted	Immediately	Buyer	Acknowledgment by Buyer and by Seller if Seller signs contract	Statute	Town Clerk	Town where the buyer resides
Delaware	Cond. Sales Contract	File copy; motor vehicles: duplicate original must be attached to application for certificate of title	10 days from execution	Buyer	None (except Fixtures)	Statute	Recorder of Deeds	County where the goods are first kept for use by Buyer; fixtures where realty is situated
D. of C.	Cond. Sales Contract	File Original—if contract is over \$100, except motor vehicles; encumbrance to be noted on title certificate in lieu of filing	Immediately	Buyer and Seller	Acknowledgement by Buyer	C. L.	Recorder of Deeds	District of Columbia
Florida	Cond. Sales Contract	None required unless and until Buyer has had possession 2 yrs.; statute does not specify what evidence should be recorded. Motor vehicles: notice of lien sworn to by Seller with Commissioner of Motor Vehicles	Before 2 yrs. possession by Buyer Motor Vehicle; notice of lien immediately.	Buyer and seller.	Acknowledgment by Buyer and Seller where contract to be recorded or covers fixtures	C. L.	Clerk of Circuit Court Motor Vehicles; notice of lien with Commissioner of Motor Vehicles	Statute does not specify
Georgia	Cond. Sales Contract	Record Original	Within 30 days from making of contract	Buyer; attestation of either notary public, justice of the peace, judge of a court of record, clerk or deputy clerk of superior court or city court.	Acknowledgment not necessary if attested	Statute	Clerk of Superior Court	County where buyer resides; if non-resident of state, where goods are located
Idaho	Cond. Sales Contract	File original: filing unnecessary where purchase price less than \$100 or article sold is household goods or furniture, property exempt from execution or attachment, farm implements and machinery, or musical instruments	Immediately	Buyer	Acknowledgement by Buyer	C. L.	County Recorder, necessarily; Secretary of State, optionally. Motor Vehicles: Department of Law Enforcement at Boise	County where goods are located
Illinois	Cond. Sales Contract	None Required	Unnecessary	Buyer	None	C. L.	None Required	None Required
Indiana	Cond. Sales Contract—must not contain confession of judgment; contents governed by statute. Copy must be delivered to Buyer	None Required (except fixtures)	Unnecessary	Buyer	None	Statute	None Required (fixtures—County Recorder)	None Required (except fixtures where goods are located)
Iowa	Cond. Sales Contract	File Original or True Copy	Immediately	Buyer and Seller	Acknowledgement by Seller or Buyer	C. L.	County Recorder	Where buyer resides; non-resident of state then where property located
Kansas	Cond. Sales Contract	File Original or True Copy	Immediately	Buyer	None	C. L.	Register of Deeds	County where goods are to be kept
Kentucky	Chattel mortgage—Cond. Sales recognized, but contracts must be filed in accordance with chattel mortgage statute	File Original	Immediately	Buyer and 2 witnesses if Buyer does not acknowledge	Acknowledgment by Buyer before proper clerk or notary public	C. L.	County Clerk	County where mortgagor resides; if non-resident, where property is located at time mortgage executed
Louisiana	Chattel Mortgage (Special La. Form)	Record Original or Certified Copy	Immediately	Buyer (mortgagor) before Notary and 2 witnesses	Acknowledgment by a notary public and 2 witnesses	Statute	Recorder of mortgages	Parish where mortgagor resides and where act of mortgage is executed
Maine	Cond. Sales Contract	Record Original	Immediately	Buyer	None if Buyer resides in organized place	C. L.	City, Town or Plantation Clerk or if Buyer resides in an organized place, Registry of Deeds	In City, Town or Plantation where Buyer resides; if Buyer is non-resident or resides in an organized place, where Seller resides with Registry of Deeds.
Maryland	Cond. Sales Contract must use eight point type. Statute governs contents where cash price is \$2,000.00 or less and copy must be delivered to Buyer on such sales	Record Original	Immediately	Buyer Except that where cash price is \$2,000.00 or less all parties must sign	None	C. L.	Clerk of Circuit Court except Baltimore, Clerk of Superior Court	Where Buyer Resides
Mass.	Cond. Sales Contract—Copy must be delivered to Buyer and must contain specified data including time price which must be printed in 8 point bold face type	None required, except fixtures, including heating apparatus and plumbing goods, and portable buildings	Unnecessary (unless attached to realty statement to be filed within 10 days from delivery of equipment)	Buyer	None (except fixture statement)	Statute	None required; fixture statements to be filed in Registry of Deeds	None required except fixture statement to be recorded in county where realty located
Michigan	Cond. Sales Contract—Statute governs contents where sale covers motor vehicles and copy must be delivered to Buyer. Motor Vehicle accessories; Seller must deliver statement to Buyer at time of sale containing certain data	None required, but advisable to file in accordance with chattel mortgage statute, true copy liens on motor vehicle accessories must be noted on title certificate	Immediately	Advisable that both Buyer and Seller sign. Motor vehicles: buyer	Affidavit by Buyer, Seller or person having knowledge of facts	Statute	Register of Deeds Contracts covering motor vehicle accessories also with Secretary of State	County where property is located and also where Buyer resides, if resident
Minnesota	Cond. Sales Contract	File Copy (where city has population of over 50,000, otherwise file original)	Immediately	Buyer	None	C. L.	County Register of Deeds or City Clerk of 1st class city	County where property is located; if situated in 1st class city, file there and also, if Buyer resides in another 1st class city, in the latter
Mississippi	Cond. Sales Contract	Record Original (after buyer is in possession for 3 years)	Within 3 years after buyer has had possession	Buyer	Acknowledgement by Buyer (or proved by acknowledgement of 1 witness taken before Notary Public)	C. L.	Clerk of the Chancery Court	County where property remains
Missouri	Chattel Mortgage	File Original or true copy	Immediately	Buyer (mortgagor)	None	C. L.	County Recorder except St. Louis City Recorder	County where Buyer resides. If non-resident, then county where property is located at time instrument executed
Montana	Cond. Sales Contract	File Original or Certified Copy	Immediately	Buyer	None	C. L.	County Clerk and Recorder, except motor vehicles: Registrar of motor vehicles	County where Buyer resides and property located when contract executed; except Registrar of Motor Vehicles, at Deer Lodge

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Pennsylvania Electric League Picks Officers

PITTSBURGH—The Board of Directors of the Electric League of Western Pennsylvania elected J. R. Richards president at its first meeting.

Other newly chosen officers include: A. J. Buzzard, vice president; Frank A. Kolb, secretary; Ludwig Hommel, treasurer; and W. D. Shaler, acting manager.

Numbered among the new directors of the league are: Warren I. Bickford, Westinghouse Electric Supply Co.; I. W. Danforth, Danforth Co.; W. C. Gloekler, Star Electric Co.; Thomas G. Hodgdon, Franklin Electric & Construction Co.; A. R. Loughborough, Graybar Electric Co.; Joseph McKinley and George W. Ousler, Duquesne Light Co.; P. H. Powers, West Penn Power Co.; R. J. Weber, Westinghouse Electric & Mfg. Co.; George G. Welfer, George G. Welfer Co.; and Don H. Wyre, incandescent lamp department of General Electric Co.

U. S. GOVERNMENT Specification

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 SALESBURG, ILLINOIS

There are Certificates of Title Laws in the fact. No definite rule can be laid down. Decisions on fixtures are conflicting even in fact. It is recommended that waiters be studied. Where both buyer and seller sign, both are required. There are stamp taxes on promissory notes in these states: Mich., Mo., Pa., Va., W. Va. Usury no defense to corporations in Del., 1 year or more after date). Pa., Va., W. Va. organized unpenalties vary in different states. Small loan making laws and

The information contained here was from reliable but is not guaranteed. Users are to examine the decisions as to the legal status of and instruments a doubt as to sufficient and adoption, complete consulted. The requirements set are subject from time to time.

The digest of the laws of the next issue of Air Conditioning and Refrigeration News. This digest is reprinted by the courtesy of Credit Co., Baltimore. It is up to date of Feb. 1, 1942. Data for this was compiled by Commercial Credit Co. Muecke, Schelker & Levinson, 140 East 42nd St. Copyright 1941 by Commercial Credit Co.

of ail Instalment Sales Contracts in the United States

Has the contract been filed or recorded?	What are the filing or recording fees?	Legal rate of interest	**Limit allowed by contract	Are attorneys' fees stipulated for, on the face of the note, collectible; if so, how much?	Must seller elect between his remedies?	If so, will the election of one remedy bar the election of any other remedy available to the seller? Effect of stipulation for concurrent remedies	Are the contracts of a married woman in business as a trader enforceable at law as if unmarried?
No	15c per 100 words; marginal release 25c; tax on amount of purchaser's down payment at rate of 50c up to 1st \$500 and 50c per \$500 or fraction thereof, and also on amount secured by instrument at rate of 15c up to 1st \$100 and 15c for each \$100 or fraction thereof	6%	8%	Yes—reasonable	Yes	Action for purchase price acts as a bar to retaking of equipment and vice versa. However, parties may stipulate for recovery of price upon retaking, sale, and crediting proceeds on note, if not inconsistent	Yes—if over 18 years. May not become surety for husband. Husband must join in real estate conveyances.
No	75c; refilling 75c; release 20c; motor vehicles, filing, 75c assignment and satisfaction 25c	6%	8%	Yes—reasonable	No	Seller may sue for purchase price or retake goods or retake and sell goods and sue for deficiency	Yes—if over 21 years
No	None Required	6%	10%	No	Yes	Action for purchase price acts as a bar to retaking of equipment and vice versa	Yes—if over 18 years
No	None Required	7%	10%	Yes—reasonable	Yes	Action for purchase price acts as a bar to retaking of equipment and vice versa. However, suing for installments which are due, where the whole price is not yet due, is not an election. Foreclosure and suit for deficiency allowed	Yes—if over 18 years
No	50¢; refilling 50¢; release 50¢	6%	No Limit	Yes—reasonable	No	Foreclosure proceedings is proper remedy. Seller should retake within 6 months after maturity of debt	Yes—if over 21 years
No	\$1.00; refilling \$1.00 by implication of statute	6%	12%	Yes—reasonable	No	Cause of action for purchase price may be joined in one action with cause of action for trover; does not apply if seller brings one suit; a retaking by seller is bar to suit for purchase and vice versa	Yes—if over 21 years
No	\$1.00; refilling \$1.00; release 25¢	6%	6%	Yes—not exceeding 5%	No	Seller may sue for purchase price or retake goods or retake and sell goods and sue for deficiency	Yes—if over 21 years
No	\$1.50; release \$1.50; for recording motor vehicle lien on certificate of title, 50c; release—no fee	6%	8%	No decisions	Yes	Action for purchase price acts as a bar to retaking of equipment and vice versa. Seller may maintain bill in equity to subject goods to satisfaction for the price and for deficiency after sales	Yes—if over 21 years
No	Filing 10c; recording 25c for 1st 100 words and 12½c for each succeeding 100 words; release same fees; for filing master form of cond. sales contract, \$5.00. Motor vehicle; notice of lien, 50c	8%	10%	Yes—reasonable	Yes	Action for purchase price is bar to retaking of equipment. However, seller may sue in equity for foreclosure and sue for deficiency	Yes—if over 21 years and authorized to control her own estate as a free dealer by order of the judge of the circuit court in jurisdiction of which she resides after published notice.
No	20¢ per 100 words plus 10¢ for indexing; counties of population over 50,000—15¢ per 100 words; 15¢ for discharge.	7%	8%	Yes—if defendant is notified in writing 10 days before suit is brought	Yes	Action to retake equipment is a bar to suit for purchase price; however, a purchase money attachment on the goods does not bar a subsequent action for Trover. Foreclosure allowed; clause allowing seller to retake, sell and sue for balance upheld	Yes—if over 21 years. May not become surety or pledge or transfer her own property as security for husband's debts
No	50¢; release 25¢	6%	8%	Yes—reasonable	Yes	Action for purchase price is bar to retaking of equipment and vice versa. However if contract so provides, seller allowed to retake, resell the goods, and sue for deficiency	Yes—if over 18 years. May not become surety for another.
No	None Required	5%	7%	Yes—reasonable	No	Seller may retake the goods, sue for conversion or sue for purchase price	Yes—if over 18 years
No	None required except fixtures: filing 25c; satisfaction 10c	6%	8%	Yes—reasonable	No	Seller may retake, resell and sue for deficiency	Yes—if over 21 years. Husband must join in real estate conveyances
No	25¢; refilling 25¢; release 25¢	5%	7%	Yes—reasonable	Yes	Seller may retake goods or sue for purchase price. Action for purchase price is bar to retaking if judgment levied and vice versa. Foreclosure and sale allowed, proceeds to be applied on judgment	Yes—marriage emancipates infants
No	25¢; refilling 25¢; release 25¢	6%	10%	No	Yes	Action for purchase price bars retaking of goods and vice versa. If stipulated in contract, Seller may retake, resell, and sue for deficiency	Yes—if over 18 years
No	\$1.00; marginal release 25c; satisfaction 50c; \$1.00 tax on mortgages over \$200.00	6%	6%	No	No	Foreclosure proper. If instrument so provides, mortgagee may take possession, must resell on notice, and may sue for deficiency	Yes—if over 21 years. Cannot become surety for another
No	50¢; refilling 50¢; release 25¢	5%	8%	Yes—reasonable	Yes	Foreclosure "via ordinaria" or "via executive"; Seller may retake and sue for deficiency if contract permits	Yes—marriage emancipates minors at 18
No	250 words or less, 50c to 75c—Clerks of cities and towns and registers of deeds, \$1.00 for 1st 500 words; 25c for each additional 100 words; recording release, 50c; marginal release by Town Clerk, 25c	6%	No Limit	Undecided	No	Seller may sue for purchase price and retake equipment or foreclose	Yes—if over 21 years
No	1½c for each 10 words if contract recorded at length; for abstract or memorandum, 50c to \$1.50	6%	6%	Yes—reasonable. When cash price \$2,000.00 or less, not more than 15% of the amount due if contract so provides	Yes	Action for purchase price is bar to retaking of equipment and vice versa. Where cash price is \$2,000.00 or less deficiency can be obtained where resale held at request of Buyer who has paid 50% of cash price	Yes—if over 21 years
No	None required; fixture statements \$1.00 plus 45c for each page after 1st plus 10c for indexing each additional name over 2. For noting a discharge, Registers charge 70c	6%	No limit; under \$1000, 18% plus \$5.00 expenses	Yes—reasonable	Yes	Action for purchase price is bar to retaking of equipment and vice versa. If Buyer has paid 50% of time price and requests public sale, he is liable for any deficiency on sale. Contract allowing Seller to repossess and sue on unpaid notes upheld, but not applicable to motor vehicles	Yes—if over 21 years. Unless certificate is filed in Clerk's office of town or city where business is located, wife's property employed in business is liable for husband's debts
No	25c; release 25c; 10c for each entry on abstract of mortgages. Noting lien on certificate of title 50c	5%	7%	No	Yes	Foreclosure is proper remedy. Under Cond. Sales Contract, Seller may retake and retain payments made or sue for price. Contract allowing retaking and suit for deficiency construed as chattel mortgage	Yes—if over 21 years. Cannot become co-partner of husband or surety except for her sole benefit
No	25c Registers of Deeds; release 25c; 10c City Clerks; release 10c	6%	8%	Yes—reasonable	Yes	Action for purchase price is bar to retaking of equipment and vice versa. However foreclosure is allowed in alternative	Yes—if over 21 years
No	5c each paper—recording 50c; recording and indexing, per 100 words, 10c	6%	8%	Yes—10% allowed	No	Seller may retake goods and also sue for unpaid purchase price. May also bring bill in equity to foreclose lien	Yes—if over 21 years
No	20c to cover both filing and discharge; recording 10c per 100 words	6%	8%	Yes—10% allowed	Yes	Foreclosure proper remedy; in the alternative, mortgagor may attach	Yes—if over 21 years
No	50c; release 25c; motor vehicles: filing contract and assignment, 50c; separate assignment, 50c; satisfaction, 25c	6%	10%	Yes—reasonable	Not decided under statute	Statute provides: Seller may recover goods in claim and delivery action; if contract so provides, sheriff may seize goods, sell and apply proceeds to contract debt, and Seller may sue for deficiency unless Buyer has paid ½ contract price and surrendered goods. Buyer may redeem within 20 days after retaking if ½ of price paid	Yes—if over 18 years

because they involve a mixed question of law and fact, should be studied with respect to the specific kind of mortgage and other lien holders of realty.

both sides required.

in these States.

in Del., Md., Mo., N.Y., Ohio (obligations maturing under 1925 act. Usury statutes and laws and the like are not considered here.

from reliable sources and authorities, are to examine the statutes and judicial decisions and instruments, and where there is doubt, competent lawyers should be consulted. They are subject to legislative change.

States will appear in the following News.

courtesy of the Commercial Credit Co. by Dills, East 42nd St., New York, N. Y.

Penn Says:

Servicing commercial refrigeration equipment is vitally important NOW. You can depend on Penn Controls.

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REFRIGERATION VALVES AND FITTINGS
Serve Enjoyment
KEROTEST MANUFACTURING CO.
PITTSBURGH, PA.

G-E Commercial System Installed by Packer

PHILADELPHIA — Receiving and pickling rooms of John Reardon's Philadelphia Wholesale Beef & Pork Products Co. have been equipped with a commercial refrigeration system by Judson C. Burns, General Electric commercial distributor.

In the packing plant, one room 17 feet x 22 feet is equipped with seven fin coil evaporators and aluminum drip pans which fit between the tracks of the overhead hangers. This room is designed to receive as much as 50,000 pounds of fresh killed pork at a time, and is equipped to cool it from 90° to 33° F. in 12 hours' time.

Adjoining this room is the pickling room, 13 feet x 18 feet in size, which is held at 36° F. The refrigeration system serving both rooms consists of two 3-hp. G-E condensing units, interconnected so as to permit the use of either one or both, according to load requirements. Thermostats, solenoids, and relays are installed to insure close temperature control.

DON'T BUY ANOTHER FACE MASK

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PULMOSAN 1600 FUMEGARD

The Pulmosan No. 1600 Fumegard is a "natural" for refrigeration men. It is designed on latest, approved gas mask principles—extremely compact in size, rugged in construction, comfortable to wear, low in cost and provides full protection in severe concentrations of Ammonia, Sulfur Dioxide and other refrigerants. Has a sturdy rubber face piece; wide-vision, shatterproof, non-fogging lenses; flutter exhalation valve; 5-point suspension; large, replaceable canister of chemical absorbents. Investigate this efficient, economical, serviceable Pulmosan No. 1600 Fumegard. Order one today and see what a great value it is.

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Air Conditioning: A 'Front-Line' Fighter In America's War Effort

DETROIT—Detroit section of the American Society of Refrigerating Engineers, honored by being the first engineering organization to hold a meeting in the new Rackham Educational Memorial here, heard discussions of wartime applications of air conditioning and then went into a round table discussion of the industry's relations with the government, at its Feb. 2 meeting.

William B. Henderson, executive vice president of the Air Conditioning & Refrigerating Machinery Association, spoke on "Air Conditioning Goes to War," and also headed the discussions on the Washington situation. F. O. Jordan showed confidential slides and described air conditioning installations in arms plants.

"Coordination is necessary to impress Washington with the importance and essentiality of refrigeration," Mr. Henderson declared. "Any evidence that we can get—particularly visual evidence—is valuable in helping to get across the story of refrigeration to these men."

Mr. Henderson admitted that for even simple refrigeration repair parts it was necessary to use a PD-1-a priority form, if the contractor or supplier wished to obtain the needed part under a priority. Shakeups in the War Board management in Washington have apparently held up the proposed refrigeration repair parts order, Mr. Henderson declared.

"What would be the case," Mr. Henderson was asked, "where an army camp should need a valve or a repair part in a hurry? Under the present system it would take weeks for the item to be obtained."

One suggestion was that the quartermaster or prime contractor in such an instance might pre-determine his requirements, perhaps get a "normal inventory" of such parts as might be needed, which he could obtain with a priority. It would be up to the supplier or installer to get him to do this, however.

VITAL TO WAR EFFORT

"Air conditioning is one of the important factors in America's war effort," declared Mr. Henderson in his talk on "Air Conditioning Goes to War." "Yesterday people thought of air conditioning as the acme of luxurious living. Today air conditioning is a front-line fighter in our battle to survive."

"The United States Navy has been a heavy buyer of air conditioning for many years. Those submarines which are harassing the Japanese supply lines, and taking toll of Jap warships and troop transports, are air conditioned for the health and operating efficiency of the crew."

"Aboard the Navy's warships, air conditioning in gun turrets removes powder fumes and keeps temperatures at a reasonable level."

"Down in the powder magazines a careful range of relative humidities is maintained to minimize the danger of explosions from static sparks and other causes. Air conditioning lends a hand in the warship's fire control stations, plotting rooms, and other vital points."

"Among the Army's items of active service equipment are air conditioned tanks, air conditioned mobile photographic dark rooms, air conditioned mobile laboratories, and air conditioned mobile hospitals."

"Obviously an army or a navy is only as good as its lines of communication and supply. Here it is that air conditioning is seen in its most effective role, helping provide our fighting forces with weapons, with food, with clothing—helping to furnish life-restoring medicines and vaccines—helping to provide the optimum conditions under which our wounded may edge their way back to health in hospitals behind the fighting front."

"The aircraft industry relies heavily on air conditioning. For example: It is imperative that humidity and temperature conditions in aircraft plants be kept under control because changes in temperature may make tolerances vary as much as 200 to 300%. This is a critical matter where tolerances for engine parts must be as fine as 3/100,000 of an inch. Highly finished and accurately machined metal parts rust rapidly when humidity is excessive. Unless air conditioning is called upon to filter the air before it is drawn into the airplane plant, dirt and dust from unfiltered air damage metal parts, machined to hairbreadth accuracy."

"What is true of air conditioning in the production of airplanes holds true in the production of other vital weapons of war. Men in air conditioned factories are turning out an endless stream of tanks, guns, and other fighting equipment in which

closely fitted, highly machined parts, true to almost microscopic tolerances, must work accurately and efficiently. These weapons must be fashioned under conditions of uniform temperature and humidity. Variations of temperature may cause expansion or contraction of metal components and of tools and gauges—thus blocking the flow of vitally needed arms."

"Steel, and more steel" is a constant cry, though the steel industry is already working practically to capacity. It would take 18 months to two years to build extra furnaces, to expand steel producing capacity 12 to 15%. The building of new furnaces would consume a substantial amount of materials urgently needed elsewhere. But again air conditioning comes to the rescue."

AIDS STEEL OUTPUT

"Air conditioned blast furnaces increase pig-iron output by as much as 20%, with a 13% saving in coke per ton of iron. To equip existing blast furnaces with air conditioning will require only five or six months and consume only a negligible amount of critical materials."

"In the production of cameras and photographic film, in the manufacture of range finders, telescopes, bomb sights, chronometers, and other delicate equipment essential to the operations of the Army and Navy, air conditioning is as indispensable as the highly skilled workmen. The delicate machining and adjustments, the scrupulous cleanliness of the components, can be obtained only if temperature and humidity are closely controlled and the amount of air-borne dirt minimized."

"In the testing and research laboratories, air conditioning plays

one of its most important parts. Military equipment is rigorously tested under simulated weather conditions of all kinds. There is close observation of the reaction of metals, of lubricants, of plastics, and of completed weapons—in temperatures ranging from 100° below zero to 150° above zero, in wind velocities exceeding 100 miles an hour, in relative humidities approaching the dew-point—and provision is made to eliminate failure of materials and equipment under extraordinary operating conditions."

"Air conditioning is essential in the manufacture and loading of high explosive shells, such as depth bombs, projectiles, and mines. It is needed in the fabrication and loading of

fuses for high explosive shells. It helps produce not only black and smokeless powder but also other high explosive chemical mixtures."

"Air conditioning speeds along the mass production of telephone and radio equipment, bullet-proof glass, machine tools, food products, ball bearings, plastics, pharmaceuticals and drugs, and many other necessary military supplies."

"Only a few of the wartime uses of air conditioning have been mentioned. Many interesting ones could be added, such as the manufacture and storage of parachutes, and storage of blood, the packing and storage of serums and vaccines, the storage of bombs and explosives, and the manufacture of synthetic rubber."

EVAPORATIVE COOLING Your Best Bet



(Above) Typical Kooler-aire installation at Marzano Bowling Alleys in Chicago.
(Right) Front view of Kooler-aire Unit.

Kooler-aire EVAPORATIVE COOLING Helps You Carry On

IF YOU are wondering how to "carry on" under today's difficult conditions, you will find encouragement and opportunity in usAIRco's story—"Today's Job In Evaporative Cooling".

It shows you how you can carry on in the interest of public health and safety with Kooler-aire Evaporative Cooling and Ventilating Units—emphasizes the vital role of air conditioning in the national war effort—how it safeguards health, steps up efficiency, speeds output.

Kooler-aire Evaporative Cooling Units require practically none of the critical materials necessary in refrigeration cooling (which we also manufacture) and take much less productive time to build. They fit into the national economy because they cost much less to buy, install, maintain and operate.

In every kind of store, in restaurants, beauty parlors, bowling alleys, banks—in every place of business—wherever people work or congregate—there's a need for Kooler-aire. We are ready to help you supply this need like we have been helping hundreds of other usAIRco dealers the past 18 years.

Write usAIRco Today . .
Ask for "Today's Job"



UNITED STATES AIR CONDITIONING CORPORATION

NORTHWESTERN TERMINAL • MINNEAPOLIS, MINN.

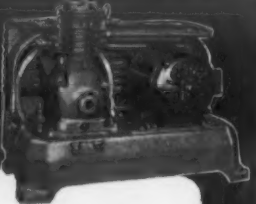
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Correcting Service Complaints on Overloaded or Overheated Motor

Motor Troubles & Their Correction

Editor's Note: Following material is part of a section in the series of articles on motors written by R. A. Fuller of General Electric Co.'s industrial engineering department—a section that is of prime interest and importance to service engineers now, because it deals with the servicing of electric motors. Previous articles have discussed fundamentals of motor construction, and proper installation and maintenance procedure.

By R. A. Fuller,
Industrial Engineering Dept.,
General Electric Co.

Complaint - -

A. Overload Device Trips Out or Motor Overheats (Cont.)

7. A Grounded Stator Winding

"A grounded stator winding" is one that has a point of faulty insulation such that a current carrying part of the winding becomes electrically connected to a part of the motor which is not intended to carry current. With only one point in the winding grounded, shocks may be obtained by touching the motor frame, or fuses may be blown, depending on the kind of power circuit to which the motor is connected.

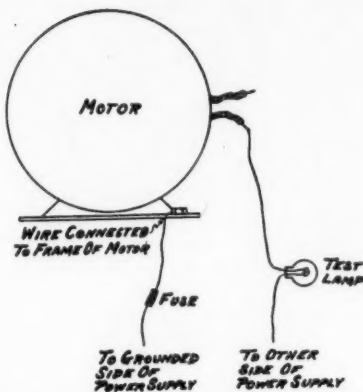
It is also possible for a single grounded point to exist and the equipment continue to function perfectly unless a second grounded point develops. If there are two or more grounds in a single coil or winding, it is a short circuited coil or winding.

A solid ground, one in which a good electrical connection has been made, can be detected with a test lamp. Disconnect the motor terminals from all wiring. The grounded side of the test lamp circuit is connected to the motor frame and the other terminal of the test lamp circuit is touched to each motor terminal as shown in Fig. 60. If the lamp lights, the motor is grounded.

By disconnecting the various windings from each other and continuing the check with the test lamp, the particular winding involved can be located. Continuing this procedure, after disconnecting the coils in the faulty winding from each other, locates the particular coil involved.

The faulty point is then located by pushing the individual wires in the coil around until one is found that causes the test lamp to go out. It is quite probable that the coil will have to be raised out of the slots before the faulty point is found. One fairly common location for such a failure is where the wire rests on

Fig. 60 Test For a Ground

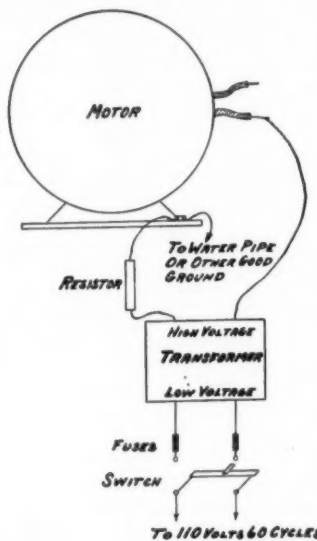


This test lamp circuit is employed to detect a solid ground.

the corner of the slot where it emerges from the slot. The fault is corrected by inserting some tape or other insulating material at the grounded point or by rewinding.

High resistance grounds cannot be detected with a test lamp. They can, however, be checked with high voltage (750 to 1,100 volts), as shown in Fig. 61.

Fig. 61 Test Setup For High Resistance Grounds



A small transformer provides the voltage step-up needed to detect high resistance grounds.

A small transformer is used to step up to the high voltage from the 110 volts usually available. The 110 volt side of the transformer should be protected with fuses or a circuit breaker so that both the transformer and the operator will be protected in cases of short circuits. A resistor of 5,000 to 10,000 ohms should be put in the high voltage lines to limit the current flow in case of a short circuit.

The practice of turning the power on and off with the low voltage switch shown and keeping away from high voltage wires will tend

to increase your safety in this testing. In using this high voltage test it is recommended that all equipment, such as capacitors and rotor windings, be disconnected from the stator winding to prevent damage to these other parts. One side of the high voltage line is connected to a terminal of the motor or of the winding being tested. If there is a ground, current flows through it and heats it up so that sparks and smoke appear at the faulty point.

Note that electricity can be dangerous—be careful.

8. Rotor Rubs Stator

"Rotor rubs stator" can be detected by turning the motor over by hand with the load disconnected (with the belts off). The rubbing will be felt as this is done. This trouble may be caused by worn bearings in which case the air gap between the rotor and stator will be relatively large at the top of the motor and small at the bottom.

Larger sizes of motors often have openings so arranged that feelers can be inserted for measuring the air gap. When bearing wear is serious enough to cause rubbing it can usually be checked by lifting up on the shaft and finding noticeable play.

When the motor is taken apart the spots where the rotor and stator are rubbing can be found and the bearings can be inspected for wear. The correction of this trouble lies in the installation of new bearing linings.

Rubbing may also occur when foreign matter gets into the air gap of the motor. The trouble is cor-

rected by cleaning the surfaces of the rotor and stator, as covered previously under "General Overhaul," using care not to damage the insulation on the wire and in the slots. Foreign matter causing this trouble tends to indicate dirty conditions, around the refrigerating equipment, which may require corrective action.

9. Low Voltage at Motor Terminals

"Low voltage at motor terminals" may be sufficiently low so that the motor will occasionally fail to start. When this occurs the overload protection trips out if it is functioning properly. The voltage at the motor terminals at the moment of starting should be checked with a voltmeter to see that it does not fall below 10% under the voltage stamped on the motor nameplate.

In cases where the voltage does cause trouble by falling below this value, there are several corrective measures that can be taken. The size of the wire that supplies power to the motor can be increased, thus reducing the voltage drop in the wire during starting. Look for loose connections and tighten up any that are found.

A loose connection may be the cause of extra resistance in the line. Extra resistance means additional loss of voltage during starting. A 115/230 volt motor, operating on 115 volts, takes twice as much current and has twice as much loss of voltage on starting as the same motor operating on 230 volts.

It may be fairly easy to change the equipment over to 230 volt opera-

tion. In doing this be sure to change the overload heaters and magnetic contactor coils. Other possible corrective measures are the use of a larger motor or the reduction of the speed and operating conditions of the load.

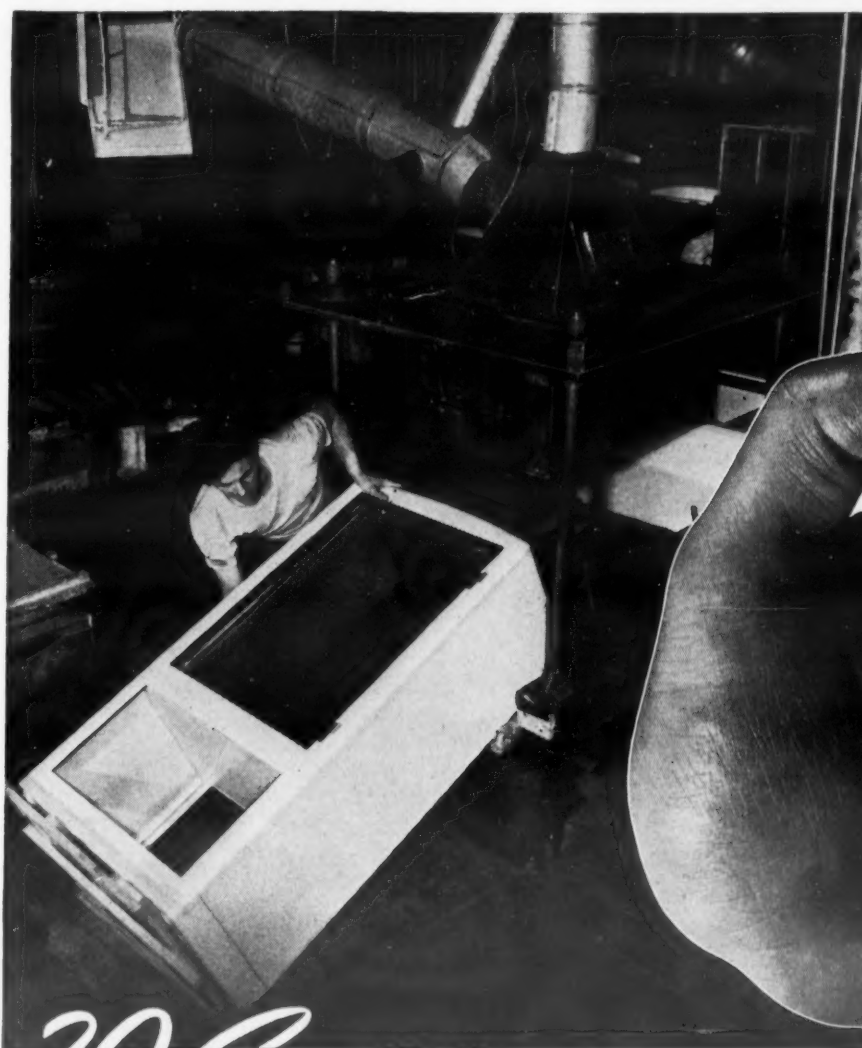
Continuous low voltage while the motor is running will cause it to run somewhat hotter than normal. Continuous low voltage in the power supply may also aggravate the starting conditions covered in the preceding paragraph. Power companies make it a fairly common practice to maintain slightly high voltage on the circuits. Where this continuously low voltage is found the power company may be able to raise the voltage or, at least, give you helpful advice.

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Now domestic refrigerators can be insulated faster—more effectively—than ever before! An entirely new refrigerator insulation system—the Balsam-Wool Pneumatic System—makes it possible to insulate an entire cabinet in one operation—requiring approximately 20 seconds.

Developed by Wood Conversion Company—pioneer in the refrigerator insulation field—the Balsam-Wool Pneumatic System offers advantages never before obtainable. The material itself is second to none in insulating efficiency—non-settling—providing a uniform resilient insulation and a continuous insulation mat, with every void filled. The clean wood

fiber material, which takes full advantage of the cellular structure of wood fibers, is blown into refrigerator walls under pressure.

The new Balsam-Wool fiber is shipped in bales easily handled by one man, saving handling and labor. An ample supply is available for prompt shipment. Get full information now about the Balsam-Wool Pneumatic System. Mail the coupon!

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Dept. 193-2, First National Bank Building
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Gentlemen:
I would like further information on Balsam-Wool refrigerator insulation.

☐ Please have your representative call.

☐ Please send me basic information on Balsam-Wool.

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SERVICE AND CO-OPERATION FOR CUSTOMER AND COUNTRY

"READY TO SERVE" was the title of an Ansul advertisement printed in these pages last July. In it we said, "Ansul is ready to serve your needs just as it is ready, if necessary, to serve the needs of the Republic."

Today you can help us help the Nation's vital defense program—and insure speedier deliveries from us to you—by returning promptly your empty Ansul cylinders. This will facilitate service in all ways, and help save steel for our vital defense needs.

ANSUL SULPHUR DIOXIDE
Plentiful and universally available—the best refrigerant yet developed for household use, and for small-tonnage commercial machines. Every cylinder of Ansul SO₂ is laboratory analyzed and guaranteed to be clean—pure—dry.

ANSUL CHEMICAL COMPANY, MARINETTE, WIS.
Manufacturers of Sulphur Dioxide for 26 Years
Methyl Chloride: Ice-X: Agents for Kinetic's "Freon-12"

ASK US FOR THE NAME OF THE ANSUL JOBBER NEAR YOU

Parts Wholesaler Sums Up His Progress In Start-of-the-Year Letter To Suppliers

ST. LOUIS—Brass & Copper Sales Co., under the signature of Howard H. Hubbell, general manager, has just sent an unusual type of letter to manufacturers of refrigeration parts and supplies whom Brass & Copper Sales represent.

The letter is something like a news bulletin, and sums up some of the Brass & Copper Sales Co. major activities during 1941. States Mr. Hubbell's letter:

"At the first of every year, I like to look over the complete figures of the purchases from all of our suppliers, and see how we are doing with them. For your company, my figures show: —

"Our company has made some very fine strides ahead during 1941 and you might be interested in some of the things that we have done:

"We've completed a 35-ft. warehouse addition, with increased facilities for handling and storing materials.

"Our Dun & Bradstreet rating was increased as to pecuniary strength, and we continue to be rated first-grade (the highest) credit . . . discounting all bills.

"We established a priorities department of several men, equipped with all the services that we found available, to help us and our customers to get Defense business.

"We lost three men to the Armed services, and have had some other rearrangements, but we believe that

our man and woman power now is in a strong position, and one that we can maintain throughout the emergency.

"The company recently established a retirement and pension plan providing for retirement of our employees when attaining the age of 65, with pension; which should keep us from hitting any possible stagnant position when all of these young go-getters get too old, and the fact that a pension plan should also make it more attractive for other young go-getters to join our ranks, as we need them.

"Suggestions from you as to how we might increase the sale of your product, and make the Brass & Copper Sales Co. a more attractive customer to you, are always welcome.

HOWARD H. HUBBELL,
General Manager."

New Firm Is Organized In British Columbia

VANCOUVER, B. C.—Arctic Refrigeration Co., Ltd. has been incorporated at Victoria, B. C. with authorized capitalization of \$10,000 and has established offices c/o Robertson Douglas & Synes, 604 West Pender St., Vancouver. The company will engage in business as distributor and dealer in refrigeration equipment.

Evaporative Conditioners Use Minimum Amount Of Vital Materials

MINNEAPOLIS—Increasing difficulty of securing cooling equipment using mechanical refrigeration is causing many air conditioning dealers to show an increased interest in evaporative cooling, reports B. P. Edelman, sales manager of United States Air Conditioning Corp. here, manufacturer of Kooler-aire equipment.

Also, Mr. Edelman points out, many small business places are able to buy evaporative cooling units. Evaporative cooling fits well into today's conditions, he says, because it involves practically none of the vital materials, and only a minimum of productive time.

While the company, which also manufactures cooling equipment using refrigeration, has had to restrict the output of this type of product to conserve critical materials for war purposes, it does not anticipate a complete curtailment of evaporative cooling and ventilating equipment for essential civilian uses, Mr. Edelman declared.

McDowell Opens Setup In Dallas Territory

DALLAS, Tex.—McDowell Air Conditioning & Refrigeration Co., service and installation contractor headed by J. M. McDowell, has occupied quarters in Commerce St.

'Junk' Parts Pay Off

Supply Jobber Takes Used Fittings & Parts In Payment of Delinquent Accounts

'Exchange' Plan Conserves Materials, Benefits All

DALLAS, Tex.—The refrigeration supplies jobber in search of new ways of liquidating his delinquent accounts may find at least a part of his answer in the experiences of U. C. Boyles, head of Refrigeration Supply Co., Dallas parts jobber.

Mr. Boyles began to think of such accounts as possible "exchange" sources of serviceable refrigeration fittings and other equipment. Virtually every refrigeration service engineer and contractor, he reasoned, possesses some such equipment, in various degrees of quality and utility. Probably he would be quite willing to exchange such "junk" for credit from his jobber, especially if a delinquent account was jeopardizing his credit standing.

Upshot of the venture is that the company not only is bringing its past-due accounts into line, but is also acquiring quite a stock of coveted (if used) fittings to help in meeting the requirements of customers who might otherwise have to do without because of wartime restrictions.

Obviously, such a source of supply is quite limited; and when it has been exhausted, Mr. Boyles' "exchange service" will have ended. In the meantime, however, it is helping him to clear up many past-due accounts.

Methods of approach to such transactions are as varied as the equipment itself. There is no fixed range of prices to be paid for one used fitting as against another. Each "deal" is a separate one, between Mr. Boyles and the individual.

Prices paid, or values offered, vary with the transactions. Seldom is there any transfer of cash. Credit memorandums are issued by Mr. Boyles in the amounts agreed upon between himself and the customer. Equipment thus procured is not included in regular inventory, but rather in terms of credit issuances, so that these transactions do not figure into the inventory schedules.

The practice is gradually working into a cooperative means of clearing used materials, for the benefit of the local servicing business as a whole. Service men, learning that this market for serviceable used equipment has been provided, are bringing in a wide variety of items for possible disposition.

In the handling of such transactions, likewise, there is no exchange of cash involved immediately, if at all. Mr. Boyles simply accepts the fitting or other piece of equipment, and issues a receipt in return. When sold, the owner may be paid in cash or be furnished a credit memorandum as arranged.

This policy is accomplishing highly desirable results within its limited range of possibility, Mr. Boyles says. It has materially aided in reducing overdue accounts; and it has, on several occasions, aided Mr. Boyles in making supplementary sales. Further, it is lessening the burden of demand for fittings by turning back into actual use many discarded and often forgotten items.

"Just a few days ago," relates Mr. Boyles, "a man came along wanting to get a Frigidaire compressor of certain size. I knew that one of my customers had just what he wanted. I went over to this fellow, and gave him an allowance of \$30 credit for it. He was glad to make the deal."

"I took the compressor to my customer, who bought it, along with several other fittings. As a result, I got a \$30 reduction of an account, and sold several other pieces of merchandise which would not otherwise have been sold."

"There undoubtedly are thousands of fittings, etc., piled up in the hands of service men all over the country, for which there is a need."

"It is our experience that the jobber can balance off in handling this stuff. Some of it will bring him a small profit, others will bring him none; and some will show a loss. All in all, he will gain, not lose."

"It is helping us cut down some accounts of long standing, and it is making it possible for us to serve our customers further by taking off their hands at some profit to them useful equipment which probably had been lying around for a long time. Also, it is helping to ease up the situation with regard to materials required by our customers. After all, many and many of the idle fittings lying around are virtually as good as new, and represent waste when unused."

"There won't be any great profit in it for anyone; but we have found that it is a useful service, in many respects."

Refrigerated Storage For Blood Plasma Termed Urgent Need Now

PHILADELPHIA—Talks on "Milk Cooling" by Richard Markley, Jr., of Wilson Cabinet Co., and "Blood Plasma" by Dr. John Reichel, of the Reichel Laboratories, Kimberton, Pa., featured the January meeting of the Philadelphia section of American Society of Refrigerating Engineers.

Mr. Markley expressed the opinion that there will be no let-down in the present requirements for milk-cooling equipment throughout the country. Since milk is one of the main requirements for good health, facilities for cooling it in increasing quantities will be necessary.

In his discussion of the treatment of blood plasma, Dr. Reichel said that although work along this line has been in progress for some time, it received national attention only about two years ago. He gave a complete story of the collection and treatment of plasma, down to the drying and storage of the processed product. Enormously increased demand for blood plasma both for military and civilian use offers an important outlet for refrigeration.

Dr. Max L. Strumia, director of pathological laboratories at Bryn Mawr hospital, in a discussion following Dr. Reichel's talk, declared there is a definite and widespread need for moderately priced refrigerating equipment to be used in both large and small hospitals for the freezing and storage of blood plasma. Use of blood plasma is increasing rapidly, he pointed out, and frozen plasma is generally preferred over the commercially prepared dried product for general hospital use.

RSES Chapter Invests Surplus In Bonds

DALLAS, Tex.—An initial investment of \$5 last week inaugurated the new plan of the Lone Star chapter of the Refrigeration Service Engineers Society to invest its surplus funds regularly in U. S. Defense Bonds, which will be exchanged for \$25 Defense Bonds.

Members of the society also voted to offer their services to local, county, and state defense agencies should the community be endangered as the result of damage to refrigeration installations, releasing injurious or inflammable gases. Copies of this resolution were sent to the civilian defense committee, the county, the city council, local fire and police chiefs, and to the Red Cross.

Transportation Savings In Frozen Foods Cited

CHICAGO—Packaging and transportation advantages of quick frozen foods were emphasized by E. W. Williams, secretary of the second National Quick Frozen Foods Exposition held last week at the Hotel LaSalle, who pointed out that 50 million pounds of food can be quick frozen and packaged in 5 million pounds of paper-board, cellophane, or waxed paper, as against 13½ million pounds of tin plate required if the foods were canned.

"It would require only 1,550 railroad cars to deliver the same 50 million pounds of food in quick frozen form, as against 3,200 carloads if canned," Mr. Williams brought out.

I was reading about
UNITY
last night

*...that's the way Joe Mierzwa, a Brunner man for 21 years, puts it.

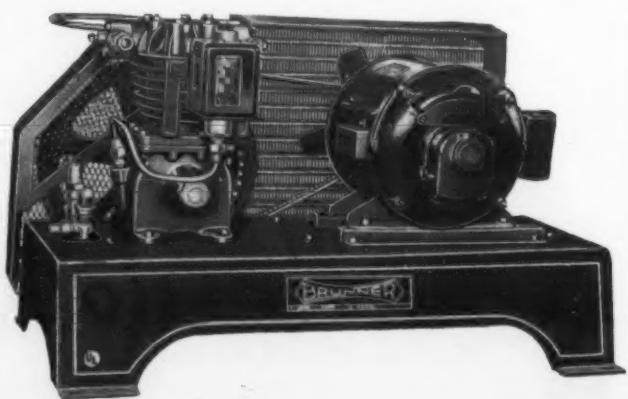
"Last night I was reading about unity... American unity that started in 1776. You'll find it in the Brunner shop and in all American plants. It's real American unity that will keep our country free."

The great army of civilian workers and military men must be fed. And feeding means food storage and proper refrigeration to prevent spoilage. Brunner is doing everything in its power

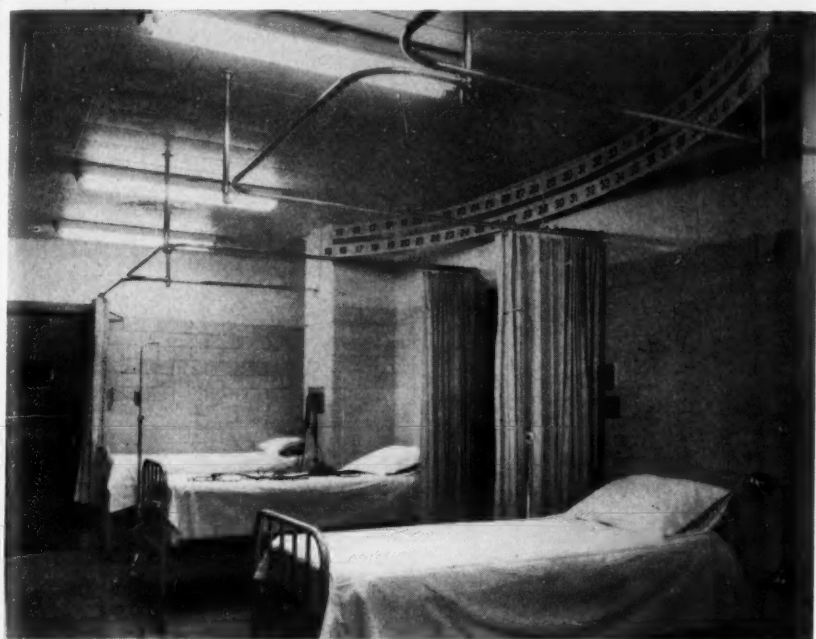
to meet the demand for its products. It couldn't be done without the unstinted cooperation of the Brunner employees, whose skill and years of experience plus their ability to adapt themselves to ever-changing conditions enables Brunner to produce condensing units that are dependable and economical to operate. Brunner Manufacturing Company, Utica, New York, U. S. A.

BRUNNER
COMMERCIAL REFRIGERATION

* It seems to us that a company is a lot of people working toward a common goal. Out of their personalities, beliefs and purposes company character is formed. Joe Mierzwa, a Brunner man for 21 years, helps to express our character as he talks about unity.



Small Changes Are Big Here



By means of exact air conditioning and the giant "thermometer" shown above the beds, temperature changes as slight as 1° F. in patients suffering from circulatory ailments are immediately apparent to research doctors in St. Mary's hospital, Rochester, Minn. Three such rooms are provided, served by "draftless" individual unit cooling systems.

Exact Air Control Helps Science Detect Slightest Obstruction In Bloodstream

ROCHESTER, Minn.—Three research rooms which are kept at exact temperatures for the treatment of patients suffering from blood stream obstructions and other circulatory diseases are included in the huge new St. Mary's hospital recently completed here.

The three new rooms, located in the research wing of the new hospital annex, are kept at 69°, 79°, and 85°, respectively—all rooms at 40% relative humidity. Cooled air from small individual 5-ton units is supplied through Anemostat-type ducts, which provide a satisfactory amount of cooling without setting up air currents. In three months of steady testing, it was found that none of the rooms, which are tightly sealed off with weatherstripped doors, varies more than one-half of 1° over a week's time.

There are two hospital beds in each room. Over the head of the beds is a huge thermometer, 40 feet long, composed of two 4-inch white metal bands curved from the centers of opposite walls around over the bed head. Thermometer readings from 10° above zero to 100° are spaced 1 foot apart in black letters over the semi-circular strips—the huge thermometer being used for testing with microscopic accuracy the temperature of patients suffering

from blood stream obstructions and other circulatory difficulties.

The temperature test is made by means of thermocouples, five of which are fastened to the fingers, and other five to the toes of each patient—on opposite sides. The thermocouples lead to a Wheatstone bridge on which is mounted a small revolving mirror, connected with a tiny heating element.

When the patient's temperature varies even so slightly as 1°, the thermocouples, which set up electrical current according to heat variations, immediately register it on the sensitive heating element, which, in turn, revolves the tiny mirror. This is provided with a bright spotlight, which casts a reflected beam of light about the 40-foot thermometer opposite, quickly registering any variation between temperature on the right or left sides of the patient's body.

If any obstruction exists in the bloodstream, body temperature is correspondingly altered, and this novel giant thermometer arrangement detects it at once. With the three rooms kept at an exact temperature the year around, there is no outside heat to interfere with the action of the thermocouples, and scores of lives have been saved, it is reported.

Buffalo Council Offers 'Emergency' Training

BUFFALO—The Air Conditioning Council of Western New York is offering its services to the Buffalo Defense Council to educate the people of that community in the proper handling of air conditioning, heating, and ventilating equipment during blackouts and other wartime emergencies, reports Walter E. Voisin, of Air Conditioning Accessories, the Council's new President.

As a part of its educational program for 1942 the council plans to prepare a booklet on the operation and maintenance of control instruments in air conditioning in order to bring vital information to plant engineers, especially those in defense industries, Mr. Voisin said.

In addition to Mr. Voisin, other newly elected officers of the council for the coming year include: vice president, Sherman W. Strouse, Buffalo representative of the Trane Co., and treasurer, Harry C. Schafer, Iroquois Gas Corp. Walter P. Davis of the Buffalo Niagara Electric Corp. is starting his sixth term as executive secretary.

Directors elected for two-year terms are: DeWitt L. King, Niagara Blower Co.; W. A. Meiter, Worthington Pump & Machinery Corp.; K. N. Nichols, Westinghouse Electric & Mfg. Co.; H. Schmidt, Fedders Mfg. Co.; W. J. Williamson, Cataract Ice Co. of Niagara Falls; and Mr. Strouse.

Norge's New Service Program Planned To Build Dealer Volume, Cut User Costs

DETROIT—A planned service program designed to bring an increased volume of service business to Norge distributors and dealers during 1942 and to aid Norge owners in cutting their utility bills was presented to Norge distributors at their recent meetings here by J. R. Cameron, service manager for Norge division, Borg-Warner Corp. It will be put in effect immediately.

The plan has six major aims: (1) To offset the serious hardships which might be caused by breakdown of appliances now in use which may be irreplaceable for the duration; (2) To maintain user morale through increased efficiency and life of appliances; (3) To conserve electricity by assuring efficient operation; (4) To conserve food supplies by assuring proper functioning of electric refrigerators; (5) To keep the Norge name before the public, assuring maintenance of the potential market at the close of the war; (6) To add profitable revenue which will offset the lowered gross sales of dealers and distributors.

The program has been thoroughly developed from both the service operations and the service sales angle, and has been checked and rechecked during recent months to assure practicality, Mr. Cameron said.

On the operations side of the picture, a careful study has been made of the minimum and maximum equipment requirements for the dealer's or distributor's shop.

Tables listing necessary equipment and carefully itemizing costs, are provided. Even the dealer whose service experience in the past has been somewhat limited is thus fully informed as to his equipment requirements, and may enter the plan with full confidence that he is able to carry it through to completion, it is claimed.

Sales promotion plans are based primarily on the use of a series of direct mailing pieces. Aimed at arousing immediate interest among appliance owners, the pieces stress the savings which will result from the use of preventive service. Plans have been developed for each product in the Norge line.

The mailing pieces have been so designed and the plan for their use mapped out in such a way that the service sales effort may be controlled to conform to the state of organization of the dealer's or distributor's service department. In this way, the service department which will require expansion to handle eventual full volume may make a beginning on a smaller scale, defraying overhead and expansion costs meanwhile. Any dealer or distributor now doing any service work at all is in a position to start the plan at once, it is said.

Details of shop requirements set up in the plan and of the specific preventive service programs which have been designed for sale to the public have not yet been released for

general publication. For the benefit of the industry in general, however, Norge plans to make this information available in the near future, Mr. Cameron stated.

Refrigeration Serving With AEF In Ireland

WITH THE A.E.F. IN NORTHERN IRELAND—The latest in American refrigeration and kitchen equipment has been installed in the warehouses and depots erected by American workmen for the use of United States combat troops quartered in camps in Northern Ireland.

A storage building, half covered with earth to hide it from any possible marauding German airmen, contains electric refrigeration units to hold an ample supply of perishable foods, such as fruits and meats.

One of the camouflaged buildings in a group deep in an ancient forest contains the most modern cooking equipment, arranged for efficiency, cleanliness, and, as always, inconspicuousness. Another hut in a typical camp has been set aside for use as a hospital. All buildings are of metal, prefabricated, and had been under construction for almost a year by a special advance party of U. S. workmen.

Defense Stamps For 'Leads'

CASPER, Wyo.—Radio Supply Co. here has helped to boost sales by giving U. S. defense bonds and stamps for sales made to prospects turned in by cooperating customers.



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THE sensation of the year in ice-cube making! A tray with individual cups of crystal-clear plastic that can be lifted out without even removing the tray from the refrigerator. Just take out a cup, hold it upside down, press gently and cube comes out freely.

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The SaniTRAY is featured by the Dow Chemical Company in a full page, 4-color advertisement in the February 14th issue of the Saturday Evening Post, followed by similar advertisements in Time, Fortune and Newsweek.

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PATENTS

HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. VAN DEVENTER (ASRE), Patent Attorney, 342 Madison Avenue, New York City.

Copper Hydrogen Brazing Has Advantages Of Strength and Cleanliness In Many Uses In Refrigeration Construction

Methods Used For Various Parts Described In Detail

By R. A. Lennox, The Weatherhead Co.*

The term "copper hydrogen braze" sounds mystifying, but in reality it is quite simple. It is merely a method of brazing two or more parts within an atmosphere where oxygen is not present.

We all have seen a piece of steel heated to a red hot state, withdrawn from the forge and hammered on an anvil. We have noticed the flakes of scale and the blue-black colors of the steel appearing on the metal as it cools. The reason for the scale and discoloration is that the oxygen in the air combines with the steel or iron to form an iron oxide.

*Address made before the Cleveland Chapter, Refrigeration Service Engineers Society

Fluxes are used in soldering and some forms of brazing to assist in removal of oxides from the surfaces of metals during the act of soldering. Everyone understands that metal surfaces for brazing or soldering must be clean. All common metals oxidize, and with some, such as aluminum, the oxide forms a protective surface.

The two hydrogen brazing furnaces in our plant are known as belt type furnaces. The first has a door opening of 9½ inches high by 20 inches wide, has a capacity of 300 pounds of brazed material per hour, consumes 90 kwh. of electricity, and cost about \$15,000. The second has a door opening of 6 inches high by 12 inches wide, a capacity of 150 pounds brazed material per hour, consumes about 45 kwh. of electricity, and costs about \$8,000.

The door opening tells us the maximum size of parts that can be brazed, the load capacity tells us the production that it is capable of. As stated, these are belt type furnaces and this indicates that the parts to be brazed are placed on a metal mesh belt which is mounted between two large pulleys at each end of the furnace.

PREASSEMBLING PARTS

The method of operation is handled somewhat the same for all manner of parts. The unbrazed materials are preassembled by press fit or by spot welding. At each point of braze, a ring or thin washer of copper is placed in position. Sometimes merely a small slug of copper may be used or possibly a daub of copper powder in paste form. The unbrazed assembly is laid in position on the belt which is slowly moving into the furnace.

When this brazing metal melts it creeps on the surfaces of the parts and is drawn into the joints by capillary attraction, forming alloys with the body metals. A great many experiments have been run regarding this capillary attraction.

One concern has two long tubes press fitted into each other and it was found that the copper brazing capillary attraction would run as high as 5 feet. As this part enters the furnace, it passes through the fire curtain into the heating section. The fire curtain is a thin wall of flame that burns constantly at both the inlet and outlet ends of the furnace. The hydrogen is fed into the center of the furnace and it escapes at either end.

OPERATION OF FURNACE

The main object of the curtain flame is to prevent air from entering the furnace, which if this happens, would scale and discolor the brazed assemblies. An excess of air would cause defective brazing. It is imperative that all oxygen be kept out of the furnace.

After passing through the fire curtain, the assembly enters the heating section of the furnace where it is heated to about 2100° F. This temperature is for steel parts. At this point the metal is sparkling red hot and the copper brazing material runs into the joints, fusing with the

Testing Receiver Tanks



After the receiver tanks have been brazed, they are tested under solution with a 250-pound air pressure for leaks.

steel. Moving along the belt, the assembly now enters the cooling section, and brazed assemblies, still in a hydrogen atmosphere, are gradually reduced in temperature until it reaches and passes through the exit fire curtain where it is removed from the belt.

The belt continues and runs underneath the installation, returning to the inlet end of the furnace. These belts are continuously heated to 2100° F. and then cooled. They are made from high nickel chrome steel called "nichrome." The larger furnace is about 55 feet in length, and of this about 14 feet is the brazing section.

The cooling section occupies most of the balance of the length. This cooling section is water-jacketed to facilitate the cooling of the brazed assemblies and also contains a hydrogen atmosphere. When the completed parts leave the belt they are at a temperature of about 175° F., which is below any rapidly oxidizing temperature.

FURNACE ATMOSPHERE

Let us call the interior of the furnace the controlled atmosphere section. This controlled atmosphere is often called hydrogen, although actually it is only about 25% hydrogen, the balance mostly nitrogen and inert gases.

This controlled atmosphere gas is manufactured by a device located alongside the furnace. Natural gas is mixed with four parts of air and then burnt in a closed drum. The product obtained is the controlled atmosphere gas. During the burning of this gas a small amount of water is formed. There is also a small amount of free oxygen. The water and oxygen are removed by a series of scrubbers and absorbers, leaving the final product ready for entering into the furnace.

This is a continuous process and a constant supply of controlled atmosphere gas must be fed to the furnace during brazing operations. A pressure of about 3 pounds per square foot is necessary to keep the controlled atmosphere gas moving to the inlet and outlet ends of the furnace and also to keep the atmosphere air from entering the furnace.

RUST ELIMINATED

Steel parts that are awaiting assembly such as shells, tubes, caps, etc. sometimes become slightly rusted. When they are assembled and hydrogen brazed they emerge from the furnace bright and free from rust. The rust disappeared while passing through the furnace as the hydrogen absorbed the oxygen in the rust. Steel plants are using controlled atmosphere furnaces for preventing the formation of oxides and discoloration during the annealing of steel.

By varying the temperature, various metals such as brass, aluminum, copper, and steel can be brazed in controlled atmosphere furnaces. Fits, limits, and design must be carefully considered in order to obtain prop-

erly brazed assemblies.

As to refrigeration and the hydrogen brazing furnace, a good example of a brazed assembly is the receiver for air-cooled condensing units. The shell of these receivers is either a deep drawn shell or a piece of electrically welded tube.

In using electrically welded tube it is best to use tubing that has been subjected to test for pin holes, otherwise excessive rejects will be found when pressure testing after brazing. In the use of tubing it is necessary to use steel caps on each end of the receiver which are made from stampings.

The valve body is either lightly spot welded or press fitted into place. The mounting stud, inlet and outlet bosses, and other small pieces required are located in either manner. The pick-up tube, usually made from Bundyweld steel tubing, is pressed into the body of the valve. If screens are required in the assembly, they are made from monel or stainless steel cloth.

(Concluded on Page 15, Column 1)

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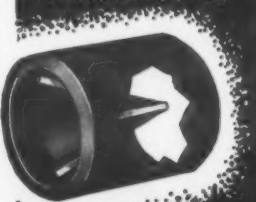
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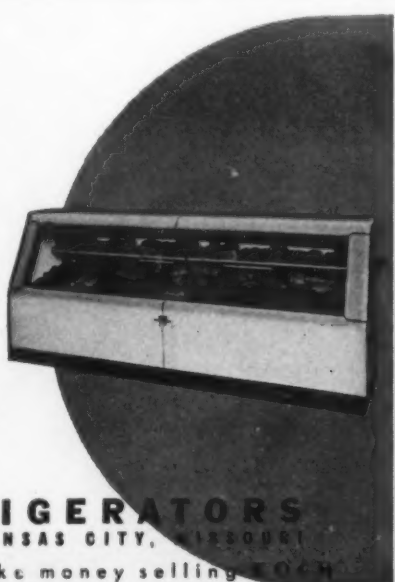
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Hydrogen Brazing In Refrigeration Parts Assembly Described

(Concluded from Page 14, Column 5)

The Crosley Corp. were the first people to successfully braze monel screens in place successfully. The use of this material for a screen serves two purposes. First, it withstands the high temperatures of the brazing, and secondly, it withstands the corrosive action that may be present when the receiver is in service.

If the valves are back-seating, the stems are placed into the valve body and the front connector seat is pressed into place, together with a washer of copper. Usually the valve stems are made from stainless steel, as the copper will not stick to this material. In some cases standard steel stems, that is carbon steel stems, have been used in back-seating valves.

TESTING OF RECEIVERS

One form of valve is produced where the steel valve stem is hardened during the brazing operation. When leaving the furnace the receiver is visually inspected and all rough spots are buffed off.

The next step is to insert the packing glands, and then the receiver is tested under solution while charged with bone-dry air at 250 pounds per square inch. This will reveal any defective brazing or pin holes and in completion of the air test the receiver is left with a volume of dry air within it. The valve is shut and capped. Painting and packing are the final operations.

Silica gel dehydrators are manufactured in the same manner, except that they are loaded with gel after the high pressure leak test, dehydrated, and painted. In addition to standard types of dryers as used in service work, special dehydrators are manufactured as required by various manufacturers. Some of these may use Bundyweld tubing for inlet and outlet connections where they are sweated to the refrigerant lines in a household box. Very many different types of valves can be made by this process. Angle shut-offs, flange-pads, strap mountings, and others including the valve caps themselves.

CONDENSER MANUFACTURE

One large refrigeration company has seven furnaces for manufacturing condensers to be used on their household refrigerators. These condensers are made from large stamped steel sheets and a continuous length of Bundyweld tubing is brazed to one side of the sheet.

Articles such as accumulators, heat interchangers, and high side float assemblies can be manufactured in conjunction with a hydrogen brazing furnace.

In the manufacture of high side floats most of the parts are hydrogen brazed, then the float valve mechanism is placed in position and the bottom cup is silver soldered to complete a final assembly. Sometimes the complete high side float assembly is hydrogen brazed in one pass.

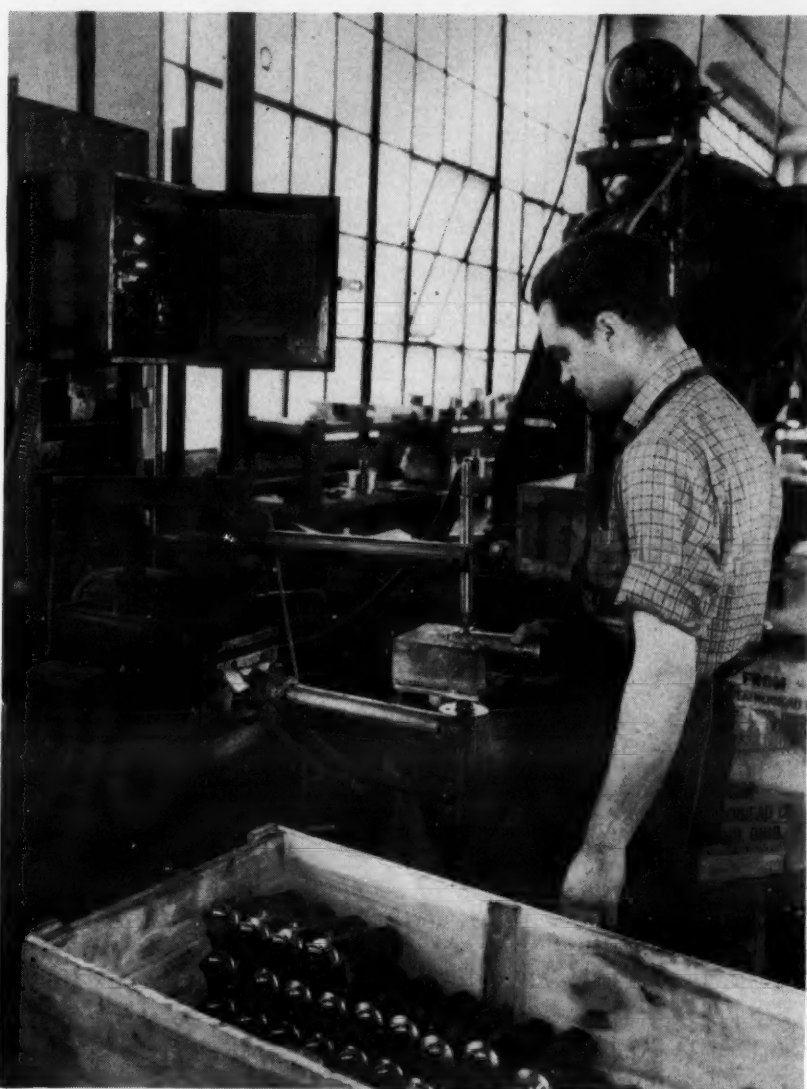
FLOAT BALL BRAZING

It might be well to state that the float ball itself is a separate hydrogen brazed assembly, together with its lever bracket. Float balls are hydrogen brazed in the following manner: The two half cups are pressed together and a 1-inch square piece of copper foil is laid on top of the assembly. Upon brazing, this copper foil melts and runs to the joints where it is attracted by capillary attraction thus effecting a perfect joint.

It must be noted that a small hole should be drilled in one of the half shells during the brazing operation in order to prevent collapsing or exploding of the float balls. This small hole is sealed after the brazing operation by other means. This hole should be on the bottom half of the ball as it passes through the furnace. Otherwise, the air in the ball will not escape quickly enough and the ball will be pushed apart before brazing.

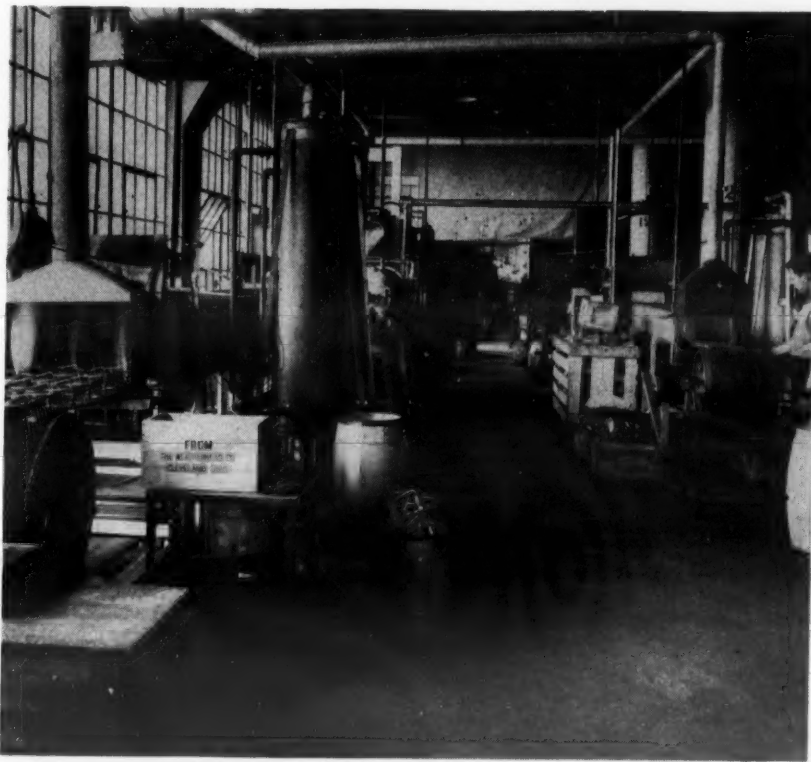
In the interests of defense, one particular hydrogen brazed part manufactured is an aviation hose fitting. This has three types of steel hydrogen brazed into one unit and consists of an SAE X-1112 (soft and

Preassembly Operation



Brackets for refrigeration tanks are preassembled before the assembly is brazed.

Copper Brazing Furnaces



Copper brazing furnaces which employ heat up to 2,150° and use conveyor belts are shown on each side of the above picture.

ductile) for crimping to the hose, a nose piece of SAE 3140 for wear, and a swivel nut of SAE 1314 for high speed tapping and machining on multiple screw machines.

This assembly gives all the desirable features at each critical point and makes a compact, safe, and serviceable fitting. Half tracks for armored trucks made from SAE 3130 and SAE 4140 are hydrogen brazed together and then heat treated in Brinell ranges from 262 to 302. We have been informed that tanks manufactured in Germany cannot obtain these hardnesses and wearabilities for tank tracks.

We have produced thousands of piston assemblies for a prominent household box of the hermetic type. Steel tubing and steel bar stock form the basic parts and these were hydrogen brazed into one piece and then followed by machining, heat treating, and grinding. Crankshaft assemblies can be made from hydrogen brazed parts such as done by the Crosley Corp., and even compressor bodies have been proposed made from stampings and tubing.

In regard to the strength of copper hydrogen brazed receivers, it might be well to mention that this is the only way receivers can be made that

would be approved by engineers of refrigeration companies. Under hydrostatic bursts the tanks will rupture in the steel and not at the brazed points. There is no separation in the seams of hydrogen brazed assemblies. Another point is that the better the press fits the stronger the weld.

In hydrogen brazing of assemblies

you can produce parts that are positively clean on the outside and the inside free from scale and discoloration. An interesting point is that during the brazing operation a decarburization occurs which leaves the surface in somewhat of a wrought iron condition a few thousandths thick which is greatly resistant to rust when the assembly is placed in service in the field.

A hermetic unit used on a prominent household refrigerator has all welded assemblies hydrogen

brazed. This promotes the excellence of a very clean assembly free from all scale, oxides, and contamination of the unit. This, in fact, is the only way that many of these assemblies can be efficiently made.

Good design is necessary to obtain good brazed assemblies. Due to the amount of machinery involved, it is necessary to have at least 300 units to run at one time on receivers. In the production of valves this figure is a minimum quantity of 1,000 pieces.

THE BUYER'S GUIDE

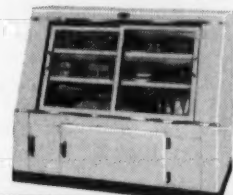


IN THE SERVICE NOW!

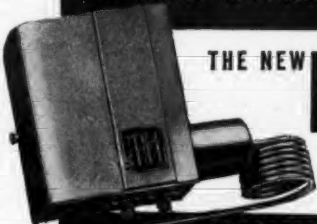
Sherer equipment serves in army camps; in hospitals as blood banks; in preservation and conservation of foods everywhere. Sherer equipment is an important link in the Victory chain.

Write for franchise details now!

SHERER-GILLET CO.
MARSHALL, MICHIGAN



A SINGLE CONTROL *Universal in Application*



THE NEW **POLARTRON**

FOR PRESSURE CONTROL UP TO 10 P.S.I.

Features: "On and Off" Switch • Universal Range • Capillary Pressure Connections • Power Models to Stock • Minimum First Service • "Timing Control" on Call but not Cost • No Short Cycling • Patented Foreign Compressor can be Connected to Produce First Free Compressor Call

Note these Advantages

MINNEAPOLIS-HONEYWELL
MINNEAPOLIS-HONEYWELL REGULATOR COMPANY
2707 FOURTH AVENUE SOUTH, MINNEAPOLIS, MINNESOTA

REFRIGERATION
Control

Model
MH

DAIRY CASE WALK IN REACH IN VEG-1 CASE STREAMLINER

Increase your Income the PERCIVAL way

Sell the "Dealer's Choice"—the line that's COMPLETE in model, size, purpose and price—the PERCIVAL LINE. Write for attractive money-making proposition.

"1886—56 years of Satisfactory Service—1942"

C.L. PERCIVAL COMPANY, BOONE, IOWA

Buy

REFRIGERATION PRODUCTS FROM YOUR LOCAL JOBBER!

He Is Playing a Vital Part in Preserving the Nation's Food Supply!

See Your Jobber or Write Direct

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Air Conditioning & Refrigeration News 5229 Cass Ave., Detroit, Mich.
Gentlemen: Please send me Air Conditioning & Refrigeration News for one year.

☐ Enclosed is \$4.00. ☐ I will send \$4.00 on receipt of bill.

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Note: Subscription price is \$4.00 only in U.S.A., Canada, U.S. Possessions, and countries in the Pan-American Postal Union. Elsewhere—\$6.00 per year.

2-11-42

Ranco EXACT
REPLACEMENT CONTROLS

NO ADJUSTMENTS OF ANY KIND!

SAVE TIME ON EVERY INSTALLATION—Just Toss Out the Old—Slip in the New!

NO RETURN CALLS TO CHECK SETTINGS
Better Profits!—Satisfied Customers!

Early Action Hoped Goodrich Simplifies OPA Rationing Powers Extended To Cover For on Parts Order Some Lines To Cut Retail Goods Sold For 'Personal' Needs Crude Rubber Use

(Concluded from Page 1, Column 5) single pulley would not stretch evenly, one belt carrying the load and soon burning out.

Experts in the Rubber Products Branch were sympathetic with the problem, said Mr. Borden, and advised him "unofficially" that belts to be used on multiple drive commercial refrigeration units would likely be excepted from the restrictions of M-15-b. If this is true it means that such belts can be ordered by signing the necessary statement, provided by the manufacturer.

Mr. Borden advised that refrigeration supply jobbers who run low or get out of stock on items needed for maintenance purposes (copper tubing included), they should send their requests for such materials on a PD-1 or PD-1-a form, to the Commercial Refrigeration Section of the Division of Civilian Supply, War Production Board, Washington.

Utility Maps Dealer 'Survival' Plan

(Concluded from Page 1, Column 5) similar seasonal nature, a limit stock selections to only those appliances which are considered most necessary to the home. Only a limited stock of popular priced lamps will be carried. Sales on this merchandise will be made across the counter.

3. To encourage dealers to carry and actively promote the sale of lighting equipment and light bulbs.

4. To encourage dealers to carry related lines which may not be as difficult to secure as electrical appliances, helping them to weather present shortages, and keeping them in a position to move ahead.

5. To encourage as many dealers as possible to maintain repair and service departments, and to direct as much of this type of business to them as possible.

6. To urge dealers to sell reconditioned appliances.

7. To continue publication of its monthly "Coordinator" to keep dealers informed about what others are doing.

8. To continue contacting dealers to help them in profitably conducting their business.

ALCO Specify ALCO Engineered Refrigerant Controls for Maximum Performance
ALCO VALVE CO. ST. LOUIS, MO.

Bush FINNED TUBE PRODUCTS
HARTFORD, CONN.

We Manufacture Only Food Storage Lockers
Our entire time is devoted to the manufacture, research and development of lockers. Write for particulars.
Master Refrigerated Locker Systems, Inc.
121 Main St. Sioux City, Iowa
250,000 Masterbuilt Lockers In Use

MOISTURE'S MASTER DAVIDSON'S SILICA GEL
—USED IN ALL WELL-KNOWN DRYERS YOUR JOBBERS CAN SUPPLY YOU—

MUELLER BRASS CO.
Port Huron, Mich.
TRIPLE SEAL DIAPHRAGM VALVE
Longer Diaphragm Life
Positive Sealing at Three Essential Points

Use CHICAGO SEALS for seal replacements
A complete line in all sizes
CHICAGO SEAL CO.
20 North Wacker Dr., Chicago

AKRON, Ohio—To conserve vital supplies of crude rubber, B. F. Goodrich Co. has announced plans for far-reaching simplification of its line of industrial and mechanical rubber goods. The program calls for a reduction of the crude rubber content of some industrial products, and the elimination of others to make the existing rubber stockpile stretch as far as possible in meeting necessary military needs while the war lasts.

It is not the intention of the company to take the crude rubber out of a product where it is believed of vital value to the general economy of industrial production, W. S. Richardson, general manager of the industrial products division, said, but the "life factor" of some products will be reduced where it is found they can do an efficient job during the time when the nation's crude rubber stockpile needs watching. This will be done by substituting reclaimed rubber, if governmental rulings will permit.

In many cases, deluxe or "super longlife" products have been taken out of manufacture and standard materials suggested in their stead. Discontinued lines include certain high-quality conveyor belts, transmission belts, and various hoses such as garden, radiator, and air hoses.

In announcing the new program, Mr. Richardson emphasized that orders with priority ratings of A-3 or higher will be completed in accordance with original specifications, and that many of the company's products will not be changed at all, and will continue to be made in such quantities as are possible under existing regulations.

1941 Refrigerator Sales In Cleveland Area Top 50,000 Units

(Concluded from Page 1, Column 2) distributor reports.

Electric range sales totaled 8,374 units, of which 6,196 were in the Cleveland division and 2,178 in the eastern division; washer sales rose to 36,682 units, an increase of 47% over the 1940 total of 24,948; ironer sales totaled 5,729 units, a gain of 82% over the previous-year mark of 3,150; vacuum cleaner sales went up about 49%, from 21,968 in 1940 to 32,626 last year.

Stoker sales totaled 2,808 units, an increase of 33% over the 1940 total of 2,114; and air conditioning blower sales reached 3,716 units, a jump of 48% as compared with 2,511 in 1940.

Refrigerator sales in the Cleveland area were at or over the 5,000-unit mark for six consecutive months last year, with the two peak months above 7,000 units.

Following is a comparison:

	1941	1940	Increase
Refrigerators	50,463	37,138	35.9%
Ranges	8,374
Washers	36,682	24,948	47.0
Ironers	5,729	3,150	81.9
Cleaners	32,626	21,968	48.5
Stokers	2,808	2,114	32.8
Air Cond. Blowers	3,716	2,511	48.0

Louis F. Fedders Dies, Headed Fedders Co.

(Concluded from Page 1, Column 1) Fedders, and two sisters, Mrs. Wilhelmina Couse and Mrs. Warren E. Detenbeck, all of Buffalo.

In 1900, when Mr. Fedders was 16, he went to work for the company which had been founded by his father, Theodore C. Fedders.

In those days the plant made kerosene tanks and bread pans. A few years later, when the automobile was considered a "hopeless impracticability," the elder Mr. Fedders converted his plant to the manufacture of automobile radiators.

In recent years the Fedders company made radiators for a number of automobile companies, including Packard and Chrysler. Ten years ago it began manufacturing refrigerating, heating, and air conditioning parts.

WASHINGTON, D. C.—Full authority to ration all goods and commodities sold on the retail market and any products sold to ultimate consumers for the satisfaction of personal needs has been vested in the Office of Price Administration in a directive issued by Donald M. Nelson, chairman of the War Production Board, and approved by President Roosevelt.

The order vesting rationing power over consumers' goods in the OPA, headed by Leon Henderson, says that the OPA may exercise the existing rationing power over:

1. The sale of products by any person who sells at retail.

2. The sale of products by any person to an ultimate consumer acquiring the products for the satisfaction of personal needs, as distinct from business or industrial needs.

The delegation of authority marks a further step in the preparation for rationing of consumers' products. "Further rationing seems inevitable," says the announcement, "and, so far as the civilian population is concerned in its ordinary purchases for personal requirements, the order announced gives full control to the OPA, although the chairman of the War Production Board reserves the right to amend the delegation."

The order issued cuts a clear line between civilian rationing for personal needs and the allocation or rationing of goods for war purposes. While the OPA will operate in the

civilian personal field, the order specifically states that the authority delegated does not permit the OPA to control acquisition of products for war agencies, including the armed services, or government agencies or other persons acquiring products for export to foreign countries.

In order to clarify further the distinction between civilian and war purposes, the order states that the Chairman of the War Production Board will, on request, advise the OPA as to the portion of existing products which is available for rationing to consumers.

Since rationing of consumers' products may require enforcement authority, the order states that the OPA may regulate or prohibit the sale of items to any retailer who has violated any rationing order, and may also regulate or prohibit sale of products to any wholesaler or other supplier of any retailer if such wholesaler or supplier has violated any rationing regulation or order.

Mueller Brass To Build \$500,000 Plant Addition

PORT HURON, Mich. — Mueller Brass Co. will build a \$500,000 addition to its factory here to make aluminum shell fuses for the Army and Navy. The building, it is expected, will be ready in three months.



There's a Bright New World Ahead!

Men are fighting . . . planning . . . working the clock around that tomorrow's world may carry a full measure of LIBERTY for all . . . Freedom to progress, to build for a confident future when men may use the works of their hands for the betterment of a long-suffering humanity, wearied from the weight of oppressors' heels.

Young America! You SHALL have a bright new world! For the brains and brawn, the skill and knowledge of a Nation of Freemen—fighting heart and soul for RIGHT living—cannot be denied the "Fruits of Victory."

We're glad to do our part—24 hours a day—that Refrigeration, charged with preserving food for the health and vigor of a fighting nation, may be DEPENDABLY CONTROLLED to essential peak efficiency for the emergency. We, too, have an eye on "Tomorrow" when a peaceful people will benefit by a continuance of research and development in BETTER Refrigeration . . . to help reconstruct a "New World."

AUTOMATIC PRODUCTS COMPANY
2860 NORTH TWENTY-SECOND STREET
MILWAUKEE, WISCONSIN
Export Dept. 109 Varick St., New York City

...and their jobbers
DEPENDABLE
Refrigerant Valves

MASTERCRAFT
ADJUSTABLE PAD
AND CARRYING
HARNESSES

Efficient, sturdy and economical. Provides safer handling and thorough protection of refrigerators, washers, ironers, ranges, radios, etc. Pad and harness are separate units and both adjustable to practically all styles and sizes of cabinets.

Adjustable Pad \$11.75 each
Adjustable Harness \$8.50 each f.o.b. Chicago. Inserting on pad at only \$1.25 per order extra.

Write for latest folder and prices on pads for refrigerators, washers, ironers, ranges, radios, etc.

BEARSE MANUFACTURING COMPANY
(INCORPORATED 1921)
3815-3825 Carlisle Street, Chicago, Illinois

HEAT INTERCHANGERS
1—Large Surge Capacity
2—High Heat Hold
3—Sweat and Flare Fittings
4—Low Cost

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TRENTON, N. J.

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ENGINEERED TO YOUR EXPECTATIONS
BUNDY TUBING CO., DETROIT